

THE AUTOMOBILE

WEEKLY

NEW YORK—SATURDAY, DECEMBER 31 1904—CHICAGO

10 CENTS

FEATURES OF LEADING CARS AT PARIS SHOW.

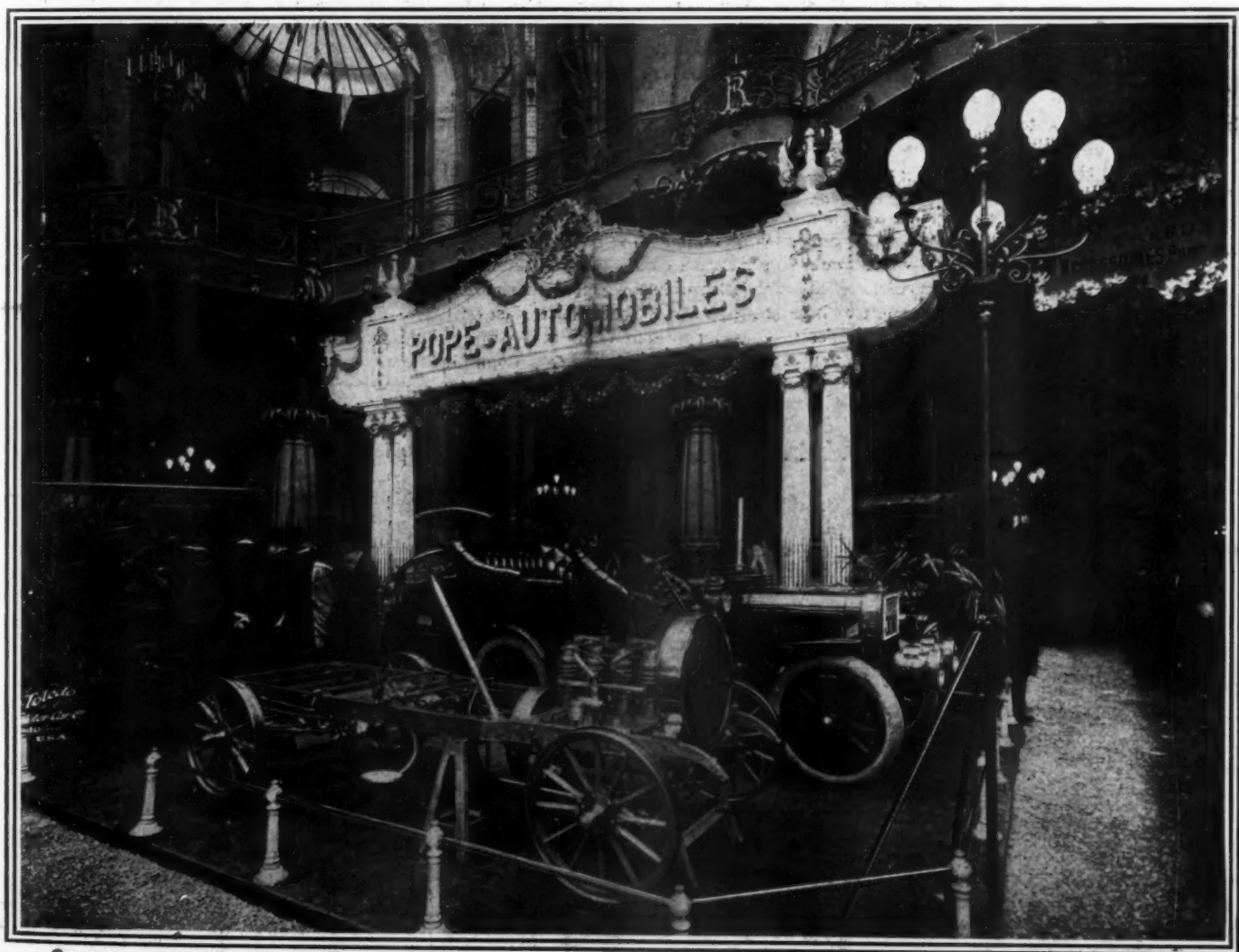
Changes for the Season of 1905 Made by the Foremost Constructors of the World in Frames, Engines, Clutches, Carbureters and Control Systems.

Especially Reported for THE AUTOMOBILE.

PARIS, Dec. 13.—In the multiplicity of exhibits on the stands of the builders of complete automobiles it is not so easy as we might suppose to pick out most interesting cars. This not only be-

cause of the number of those of merit, but because there has come to be a great similarity in general design. The problem is complicated, too, by the presence of many cars in which defects of design and con-

struction develop upon close inspection, where at first glance the fineness of finish and artistic use of color contrasts were misleading. The work of houses of high reputation is always of interest, whether

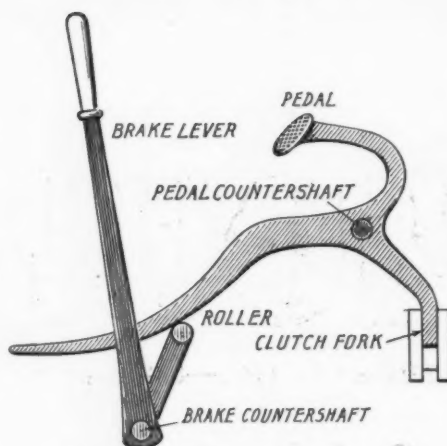


POPE-TOLEDO STAND AT THE SEVENTH ANNUAL PARIS AUTOMOBILE SALON, WHICH CLOSED ON CHRISTMAS DAY.
Chassis of 24-Horsepower Car in Foreground, 45-Horsepower Touring Car in Center Background and 50-Horsepower Pullman at Left Rear

they are old or new comers in this particular field, and to the consideration of the products of some it will be profitable to turn.

Panhard & Levassor show a new 50-horsepower chassis built from their racing experience of the past season, which, although light, since it is below the weight limit for racing cars, is, however, sufficiently strong to carry any type of body that might be desired. The engine, as is usual nowadays with Panhard, has four cylinders, cast separate, with a bearing for each throw of the shaft.

The valves are placed symmetrically on each side of the cylinders, which have cast water-jackets (unusual on a light Panhard engine), the head and cylinder being one single casting. Ignition is by Eisemann high-tension magneto. The Krebs carbureter is used, but instead of the old centrifugal governor heretofore always fitted to the Panhard, a new hydraulic governor is fitted. This governor reminds one very much of the Napier governor, the difference being in greater simplicity and efficiency in the French machine, and also in the fact that on the Napier car it was used to regulate the quantity of air supplied to the mixture in the carbureter, while on the Panhard it is used to actuate the sliding throttle at the carbureter outlet, a work for which it is much better fitted. This governor consists of a diaphragm, bearing on one side the pressure of the water in the water circulation, this pressure being transmitted through a small copper tube from the point of maximum pressure in the water circulating centrifugal pump. This diaphragm, by means of a light rod against a spring, closes the throttle more or less, according to the extent it is deflected by the water pressure. A pedal-actuated accelerator allows the driver to stop or to regulate at his will the action of this regulator, thus permitting the engine to attain any desired speed.



PANHARD CLUTCH PEDAL AND BRAKE LEVER ARRANGEMENT.

The gear-box is the usual Panhard type, except for the differential, which is brought right over to the rear axle, of which it is a component, while the cardan live shaft, instead of being situated between the gear-box and the differential, as is the usual practice, is placed between the clutch and the gear-box, permitting this shaft to be made lighter than would be possible if it were placed in the other portion, since it always has a constant horizontal effort to transmit—that is, that of the explosion, which does not vary, whether the car be on either the high or the low gear.

The car is fitted with two hub brakes, actuated by the side hand lever, which brake throws the clutch out. The foot brake is on the live shaft, and does not affect the clutch. The action by which the hand brake throws the clutch out is very simple and very unlikely to give trouble. The clutch pedal carries a rearward extension, besides the clutch fork. Under this extension is a roller carried by a bracket fast on the hand brake countershaft, so that when the brake is applied, this bracket, through the roller, lifts the extension and withdraws the clutch.

All the pedals on this car are made of stamped steel for lightness.

The engine is carried on an angle iron sub-frame, held to the side members of the frame by means of pressed steel cross pieces.

The frame is not narrowed in front, and deep side members are formed from ordinary stamped steel of very light gauge material, stiffened by an ash cross reach running the entire length of the frame.

The radiator is of the honeycomb type, and is cooled by an air draft induced by a fan, driven by belt from the crankshaft, and by fan blades cast between the clutch and the inside of the flywheel rim.

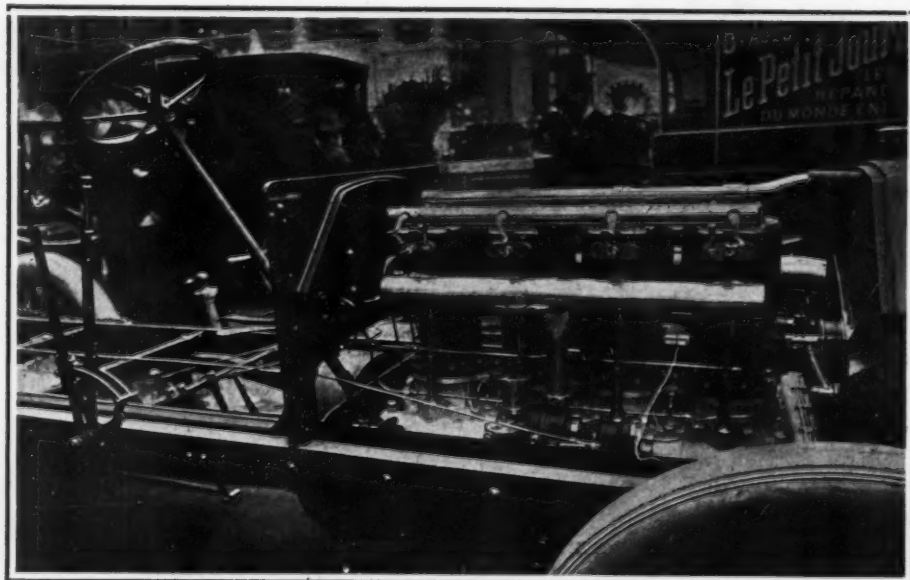
CLUTCH MADE OF STEEL PLATES.

The clutch, which is one of the most interesting features of the car, consists of a certain number of thin steel plates, made to rotate with the flywheel by means of gudgeons sunk into the latter close to the outside circumference of the plates, which are allowed to slide freely lengthwise on them. Between each pair of these plates is a similar plate, but of smaller diameter, so as to clear the gudgeon pins of the flywheel plates, the small plates sliding on keys on the clutch shaft. When the clutch pedal is in normal position a spring giving only a slight pressure compared to that of the ordinary clutch spring holds these plates together, the great amount of frictional surface thus created being quite sufficient to drive very high powers, while if the pedal is even very slightly depressed, the spring pressure is entirely removed, and the plates, not being under pressure, create no friction, and perfect freedom of the engine is assured.

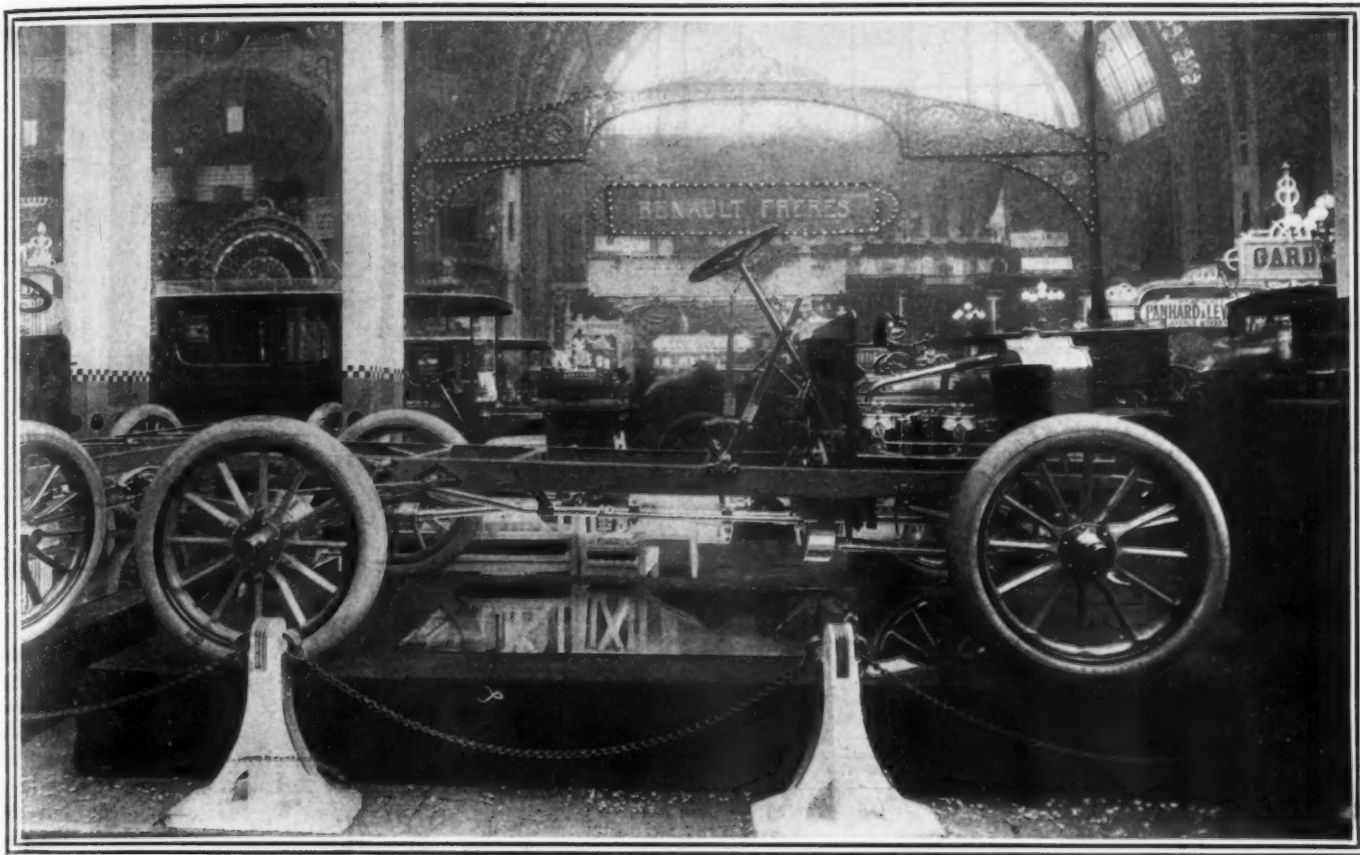
DE DION ADOPTS SLIDING GEARS.

One of the great novelties of the show, together with this 50-horsepower Panhard, is the new four-cylinder De Dion car, one of the first samples of which has just completed a tour around Europe and has created a great deal of excitement here. The most interesting parts of this car are the engine and the clutch. The frame is made of pressed steel, with tubular cross members, which carry the engine and the change-speed gear. The latter is now of the sliding-gear type by rack and pinion, a system of gears which the de Dion people harshly fought for the past three years, but to which they have come at last. Their great objection to the sliding gear was that it necessitated a main clutch, which was necessarily a more complicated affair than their individual clutch for every speed. The public's objections to the de Dion individual clutches were that they could not be operated by foot, and that for more than two speeds the manipulation was so complex that city driving was becoming an annoyance. Having thus been obliged to adopt a clutch and sliding gear, the de Dion people took the thing very nicely and produced a very fine bit of workmanship.

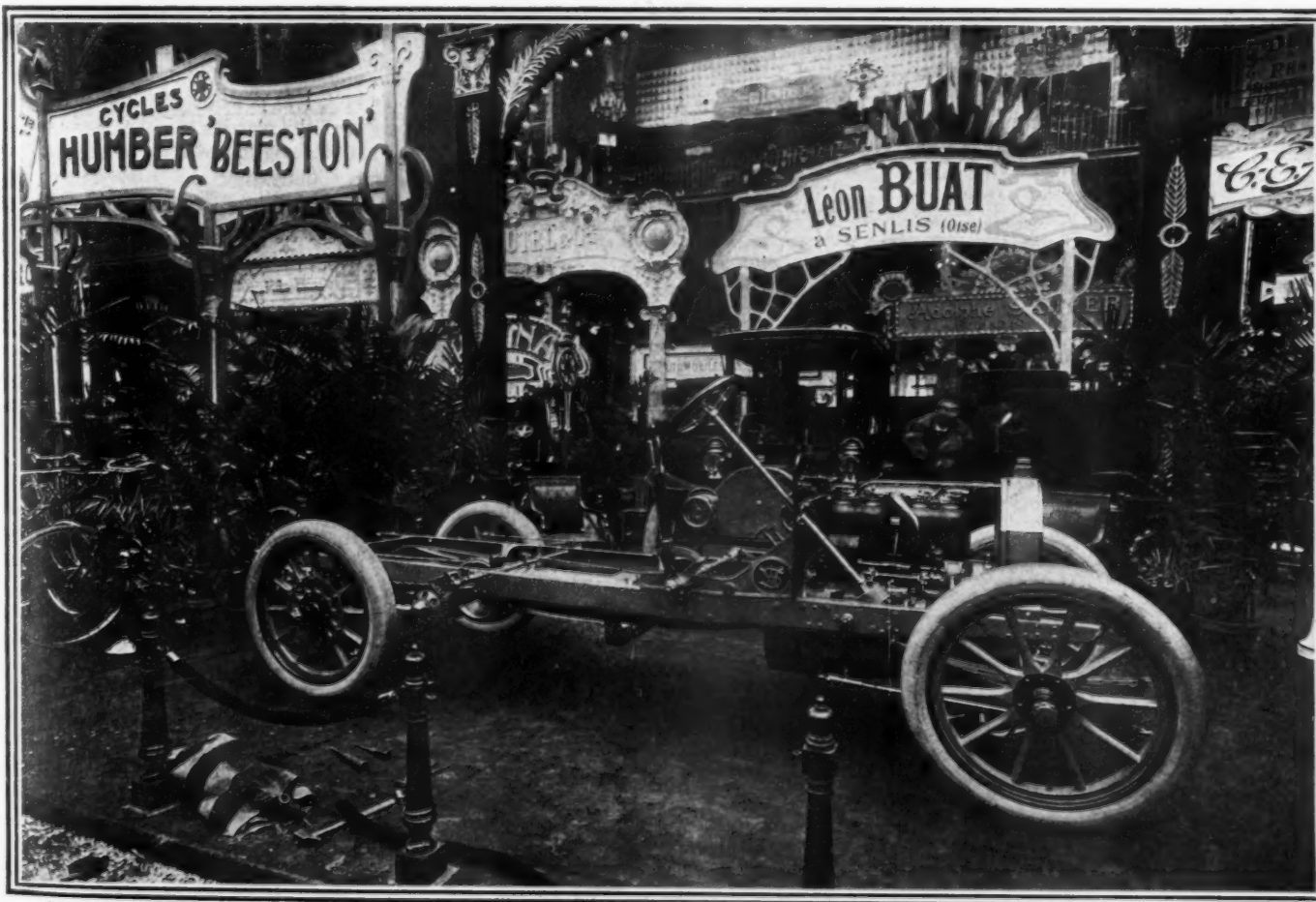
Their rear axle construction is the same as heretofore; that is, a rigid one-piece



INLET SIDE OF MOTOR OF THE NEW 50-HORSEPOWER PANHARD.



CHASSIS OF 24-H. P. RICHARD-BRASIER, SHOWING NATURAL WATER CIRCULATION SYSTEM—GORDON BENNETT CAR AND TROPHY IN REAR.

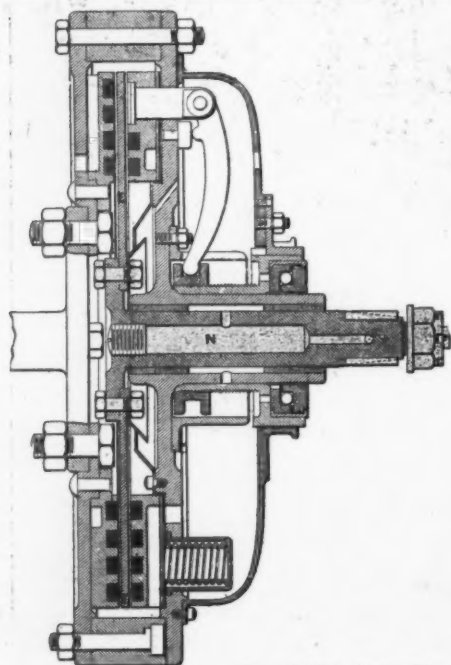


CHASSIS OF THE NEW 24-28 H. P. CAR JUST BROUGHT OUT BY THE FRENCH FACTORY OF THE WESTINGHOUSE COMPANY.

rear axle, with hollow spindles, through which two universal-jointed shafts take the drive to the hubs from a differential suspended on the chassis frame and housed in one casting with the change-speed gear. There are two pedals and two hand levers. The left pedal slows the engine down and then throws the brake on, and when released allows the engine to race and then releases the brake. The right pedal actuates the clutch alone; the reason for not making this pedal also a brake pedal being, according to the builders' theory, that after some wear it will happen that either the braking or the clutch action will have become worn to a greater extent than the other, thus causing irregular working. They, however, made the hand brake to act on the clutch, because, they state, it is merely an emergency brake, and should not be used often enough to cause its transmitting levers and other parts to wear unduly. The second lever acts on the change-speed gear.

FEATURES OF DE DION ENGINE.

The engine of this car has automatic inlet valves, only one contact breaker blade and a high tension distributor, separately cast cylinders and a special starting exhaust cam to release the compression partly. The lower part of the crankcase can be taken off without affecting the crankshaft bearings, a feature now universal in France. The top of the cylinder, but not the valve chamber, is separate, and fits with a screw joint of the type called "autoclave" in France. The pistons are steel and very light. They are fitted with three packing rings at the top for tightness of the explosion chamber, and with a fourth one at the lower part to wipe the excess of oil off the cylinder walls. The crankshaft has five bearings, one for each throw. The valves are of the usual type and disposition, the exhaust valves having the customary variable lift, which, besides being under the

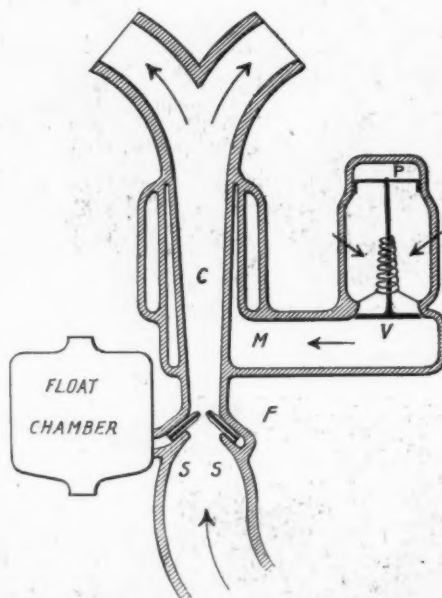


From *La Vie Automobile*.
SECTION OF THE NEW DE DION CLUTCH.

driver's control, is also regulated by a centrifugal governor.

Lubrication is forced by a pump of the gear type, driven from a bevel gear through a coil spring to avoid strains on working parts. Oil is taken from a chamber cast in the crankcase holding enough oil for 400 miles. The oil is thrown to all parts of the crankcase and forced through the hollow crankshaft, from which it returns to the oil chamber, thus causing a constant flow of oil whenever the engine is working.

The carbureter is of the usual de Dion type, with annular float. An improvement has, however, been made, by which the opening or closing of the throttle regulates the quantity of air passing across the nozzle in such a way that this quantity is absolutely constant. This is obtained by spe-

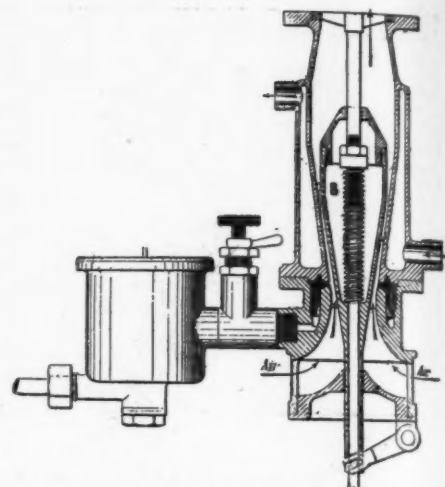


RICHARD-BRASIER CARBURETER WITH OPPOSED FUEL NOZZLES.

cial openings properly cut in one single tubular funnel, used both as throttle and an air regulator.

NEW TRIPLE PLATE CLUTCH.

The clutch is composed of a casing fast on the crankshaft and used as a flywheel, which is practically oil and dust tight, and contains the entire clutch system. The wall of this casing that is closest to the engine bears a friction plate inlaid with cakes of graphite for lubrication; the other side carries six gudgeons and six springs, which press towards the plate mentioned, another plate of a similar type. The action of these springs can be resisted and overcome by toggle levers actuated by the foot clutch pedal. Between the two plates is a third one, which is a plain steel plate fast on the clutch shaft to the change-speed gear. This plate is squeezed between the two others when the clutch is let in, thus causing sufficient friction to drive the car. The graphite is to prevent seizing and to permit a certain amount of slip when the clutch is let in. Ball bearings take up all the end thrusts, and these are all contained in and



DECAUVILLE CARBURETER, SHOWING AUTOMATIC MIXTURE REGULATING FLOAT.

taken up by the casing, so that none of the shafts is affected by the clutch pressure.

RICHARD-BRASIER COPIES OF RACER.

The Georges Richard-Brasier cars, the sisters of the Gordon Bennett cup winner, are practically reductions of the racing car so far as general engine and gear dimensions are concerned. Some parts which were made very light on the racer have been strengthened on the touring car, but the general design has been preserved. The piston stroke is a little longer in proportion to bore than it was before, the turning speed of the engine being thus 10 per cent slower for the same piston speed.

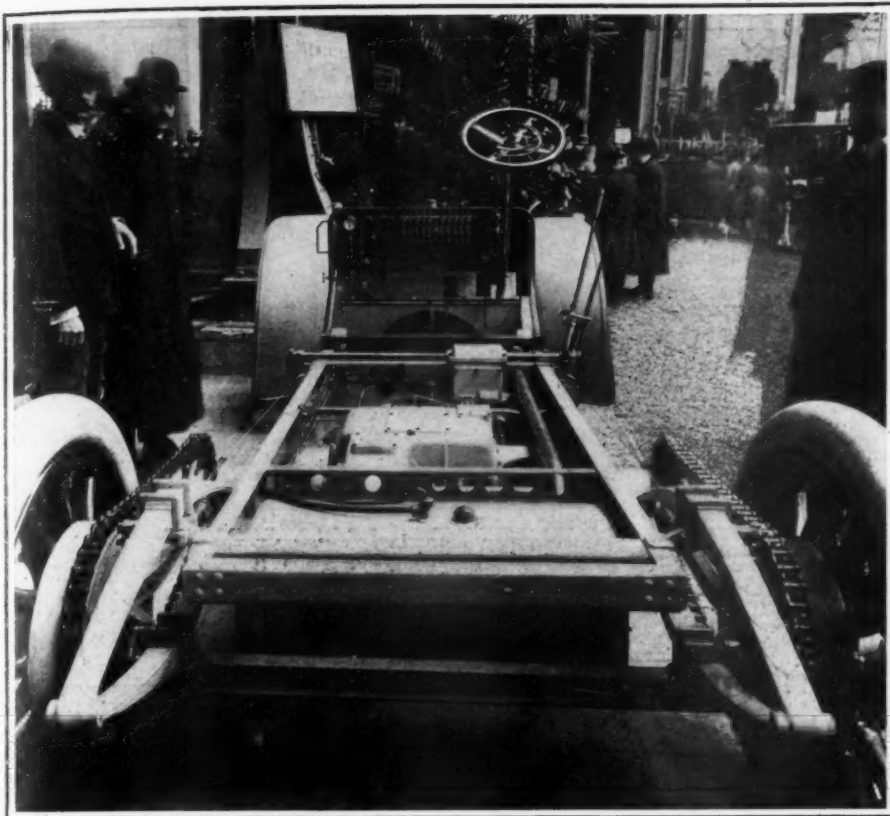
AUTOMATIC SPARK ADVANCE.

The ignition is by high-tension magneto, with only two positions for the spark timing lever—the starting position, corresponding to a late spark, and the running position, being a slightly advanced spark. The change of time of the spark is automatic. When the starting handle is put in mesh with its ratchet, the spark is automatically retarded, and when it is released, the engine being started, the timing apparatus puts itself in the running position, and the effect corresponding to further advance of spark is produced by the spark, which grows fatter, and thus ignites the charge quicker, as the speed of the engine, and consequently that of the gear-driven magneto, increases.

Except in the 40-horsepower car, the cooling is by natural circulation; in the more powerful type it is by pump. The fan behind the radiator is driven by a large flat belt and is made of spring steel, forged into correctly shaped propeller blades, thick and narrow at centers, and thin and wide at the outer ends.

The exhaust is through very generous pipes into a large muffler at the extreme rear end of the car, and from there into two reed-shaped funnels exhausting right at the contact point of the rear wheels, thus very effectively dispersing the dust. The car is lubricated by a mechanical oiler on the dash.

The clutch is of the ordinary cone type, and the change-speed gearing, which runs



REAR VIEW OF 1905 MERCEDES, SHOWING LONG CHASSIS AND DOUBLE ELLIPTIC SPRINGS.

on balls throughout, is of the sliding gear type. The mechanism is carried on a tubular sub-frame, the frame proper being of stamped steel. The axles are an exact copy of those on Thery's car.

RICHARD-BRASIER CARBURETER.

The carbureter is of the Brasier opposed jets type. The float chamber communicates with a fuel chamber *F* surrounding the base of an inverted cone *C*, in which the suction of the engine takes effect. Penetrating the cone from the fuel chamber are two sprayers *s s'*, inclined at an angle toward each other, much like the gas jets in an acetylene burner, so that the spray of each breaks the other, thereby forming a large surface of liquid.

The latest addition to this carbureter is the new automatic extra air valve *V*, opening from outside into a chamber *M*, surrounding the spray cone for about three inches, and opening into same through long vertical slots. The characteristic of this valve, which resembles very much an ordinary inlet valve, is that it carries on top of its stem a small spun-brass piston, which is almost a fit in a small closed cylinder. Thus, when the suction of the engine at high speeds tends to open this valve, it is kept from moving too rapidly and spasmodically by the air cushion behind its regulating piston, past which air can only escape very slowly.

CHANGES IN THE SERPOLLET STEAMER.

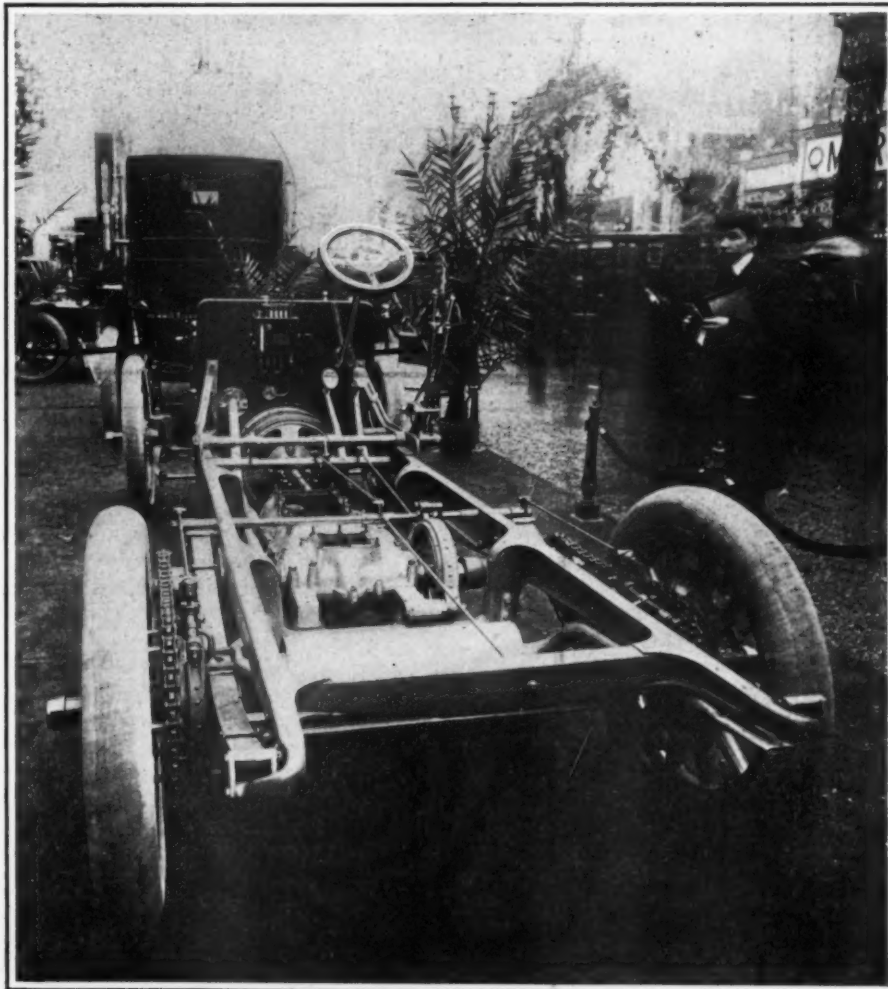
Another great novelty brought out by an old concern and exhibited at the Salon is the new Serpollet steam car. As far as outside appearances are concerned this car has

now exactly the same look as a gasoline car. The radiator and hood are of excellent design, and enclose the engine and water tank.

The engine did not undergo any changes, but the boiler is reduced in size, and the fuel and water feed are now forced by a small donkey engine as large as a man's hand, which, being controlled by the driver, exactly proportionates the amount of water and fuel sent to the boiler.

NOVEL CARBURETER ON THE DECAUVILLE.

Among the modern cars of well-known make the Decauville retains the characteristics of last year, the main change being in the carbureter. Leaving out the minor details, such as warming chamber, float, etc., to come to the spray chamber, this is seen to have the shape of two cones united at their bases and flushed together by an easy curve. At the base is a circular slot *A A'*, through which the gasoline can spray towards the center of the chamber. This large spraying surface is itself a notable feature, but what is most novel about this apparatus is the olive-shaped spun-brass hollow body *B*, which is held by guides in the center of the chamber. This air-float can be made to operate in two ways; if it is perfectly free to rise and fall it will be in its normal position as close to the walls of the spray chamber, near the sprayers, as the guides will allow, leaving the passage for the air



REAR VIEW OF WESTINGHOUSE 24-28-H.P. CHASSIS, SHOWING TRANSMISSION SYSTEM.

very small, while the jet of fuel induced by the powerful motion will be very strong. If the engine now starts revolving at high speeds the motion will be still more powerful, and the olive-shaped piece, being very light, will be lifted until balanced in the current of gas, increasing the space between this float and the walls near the sprayer, and reducing the quantity of air passing in direct contact with the nozzle, so that the quantity of fuel is reduced in proportion to that of air. If a spring is interposed to regulate the motions of this movable piece it will give a constant carburation. The Decauville people found, however, that they could obtain still better results by actuating this float by means of the engine governor, and they connected the lower part of the

to the minimum; when pushed away, it leaves the engine under the control of the driver's special operating lever, so that the driver is allowed to race his engine, if he so desires, with his clutch pedal depressed, as well as with it in engagement.

We again find in this car that the foot brake does not throw the clutch out, but that the hand brake does.

One of the features of the Mors is the lubricating system. Instead of the usual forced-feed oiler on the dash, the car is fitted with a small gear pump without direct drive, but having on its projecting shaft a ratchet wheel that is rotated slowly by a pawl operated by the lifter of the inlet valve of the last cylinder.

There are two foot brakes, neither of

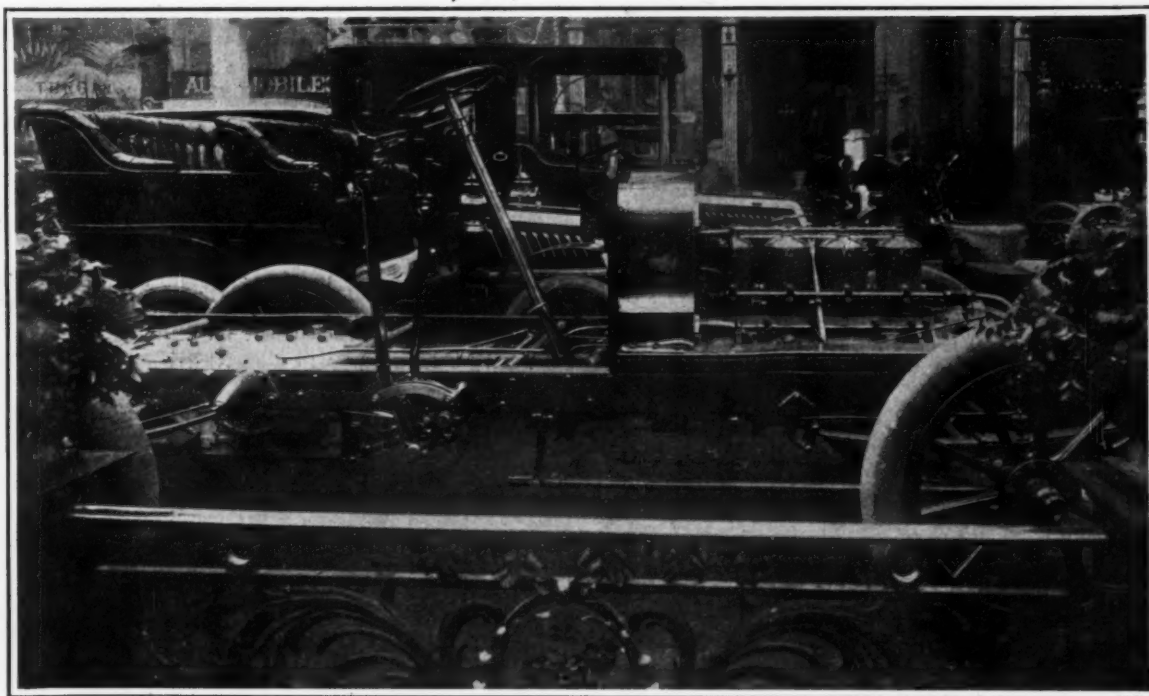
hard is considered the best heavy car. There is, however, no startling change in its construction for next season.

The Renault builders have adopted the pressed steel frame and, as every one knows, the natural cooling system.

BALL BEARING CRANKSHAFT IN HOTCHKISS.

Passing now to the three new cars which were the surprise of the year, we will find in the Hotchkiss, the Westinghouse and the Delaunay-Belleville cars a worthy conclusion for this study. The Hotchkiss is the French car which made the quickest success here. Launched less than a year ago, it is now one of the great French makes.

The Hotchkiss company has from the start been the champion of the ball bearing;



CHASSIS OF THE 15-HORSEPOWER DE DION, WITH RADIATOR AND WATER TANK BETWEEN MOTOR AND DASH.

olive to a bell-crank lever leading to the governor collar.

FEATURES OF THE MORS.

Another car which underwent important modifications for this season is the Mors. In the engine the cylinders are cast by pairs, instead of individually, which fact is, if compared with many other firms, a step backwards; at the same time the separately cast aluminum jacket, which was a characteristic of the Mors, has also disappeared and is replaced by an ordinary cast jacket. The lower part of the crank-case is detachable, for inspection of the bearings without disturbing the latter. The engine is not fitted, any more than it was before, with a governor, but the complicated wire system by which the speed of the engine was automatically cut down when the clutch was out has been suppressed, and instead the dashboard carries a long square taper steel rod, coming about to the height of the driver's knee and having a wooden handle. This rod, when pulled full forward, reduces the speed

which operates the clutch; one is an external brake on the hubs and the other an external brake on the countershaft, while the hand brakes expand inside the wheel hub drums.

It is claimed that the steering gear of this car cannot possibly develop lost motion, as very powerful springs are interposed near the worm and sector, and keep one closely in contact with the other, so that if when turning to the right, for instance, the screw pushes down direct on the teeth of the sector, when turning to the left the spring will still keep the teeth of the sector against the worm, and the motion of the wheels will be obtained through the power of the spring, and not by the lifting action of the other side of the thread of the worm. It will thus be readily understood that while one turns to one side very easily, being assisted by the tension of the spring, it must be much harder to turn to the other, as there is the resistance of the spring to overcome.

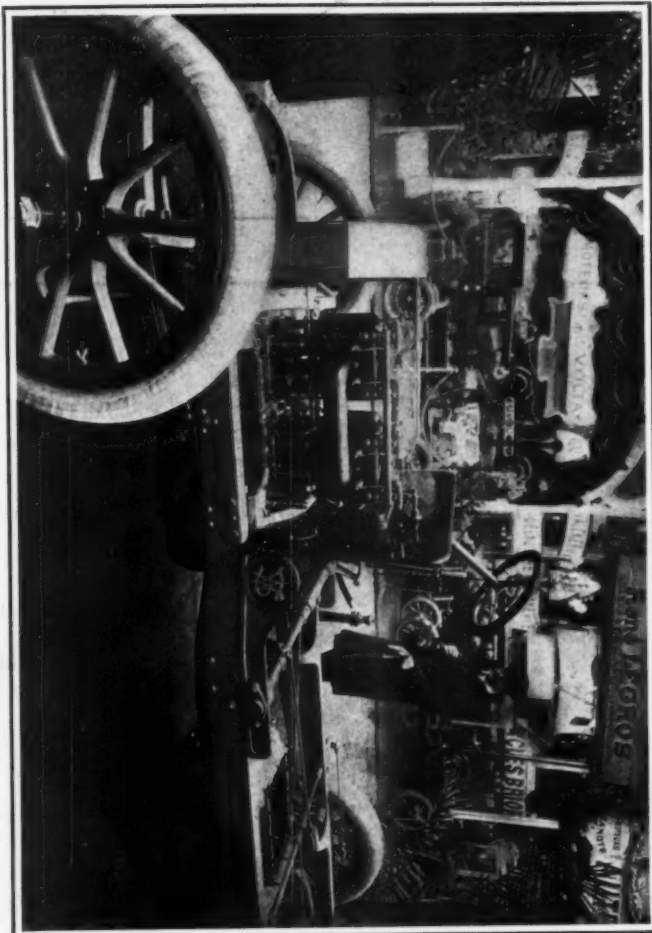
The Renault car is considered by many here as the best light car, just as the Pan-

there is not a working bearing in its car except on the connecting rod which is not on balls; the crankshaft itself, with its three bearings, is on balls, and so far the arrangement has given satisfaction. The crankshaft of the engine of the Hotchkiss auto boat with the bearings is shown, and it is absolutely impossible to find the least play in it, while a mere touch of the finger sets the big shaft and flywheel revolving.

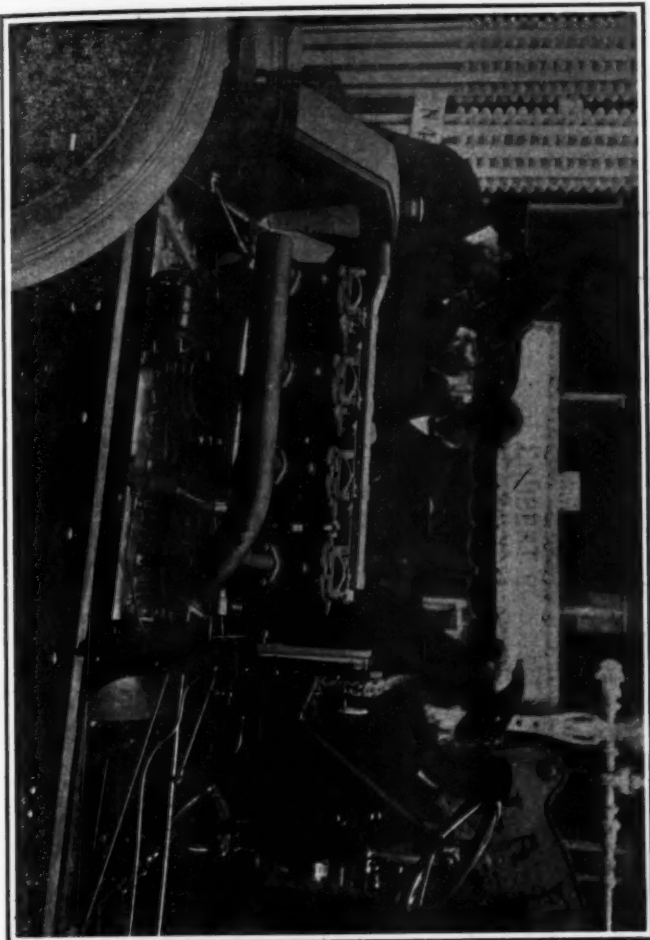
Besides this characteristic, the car has a Mercedes type ignition and a very noticeable change-speed, by which it is possible to start the car on the low gear and jump straight to fourth without passing through the two intermediate speeds. This change-speed is also notable because of its suspension; instead of being held on the two side-frame members, is carried by its ends from the cross members made of pressed steel.

WESTINGHOUSE A FINE CAR.

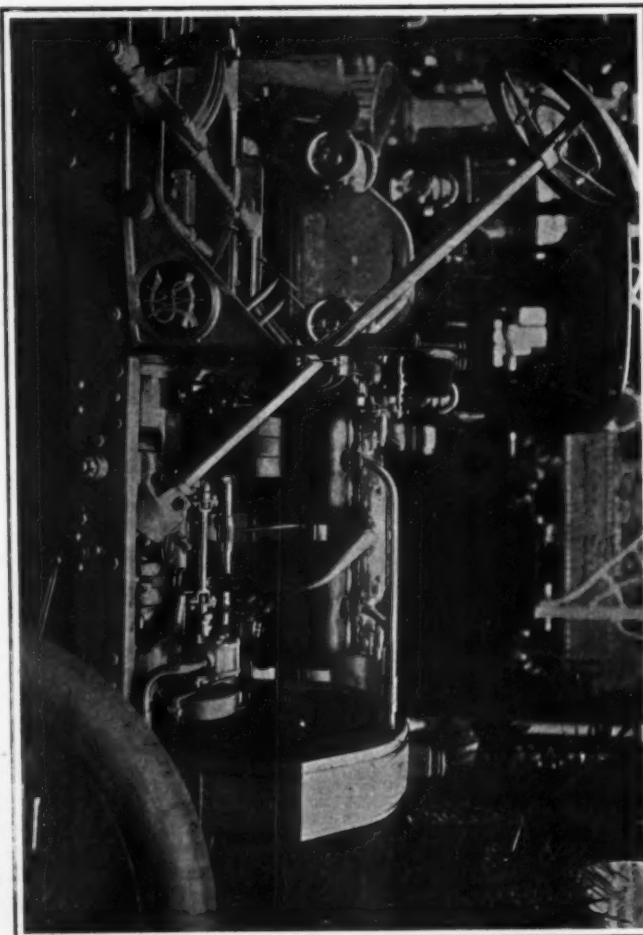
The Westinghouse car, although a beautiful sample of workmanship and a marvel



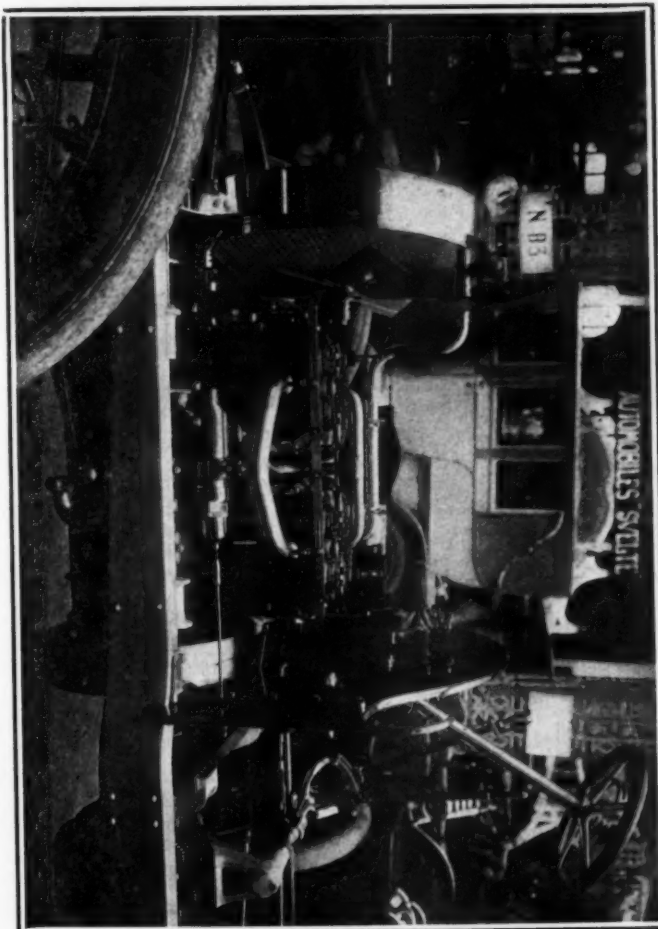
EXHAUST SIDE OF WESTINGHOUSE CHASSIS, SHOWING CRANKCASE RELIEF TUBES.



EXHAUST SIDE OF 50-H. P. PANHARD, SHOWING WOOD AND PRESSED STEEL FRAME.



INLET SIDE OF WESTINGHOUSE ENGINE, SHOWING DRIVE FROM WATER PUMP TO MAGNETO.



INLET SIDE OF HOTCHKISS ENGINE WHICH HAS BALL-BEARING CRANKSHAFT.

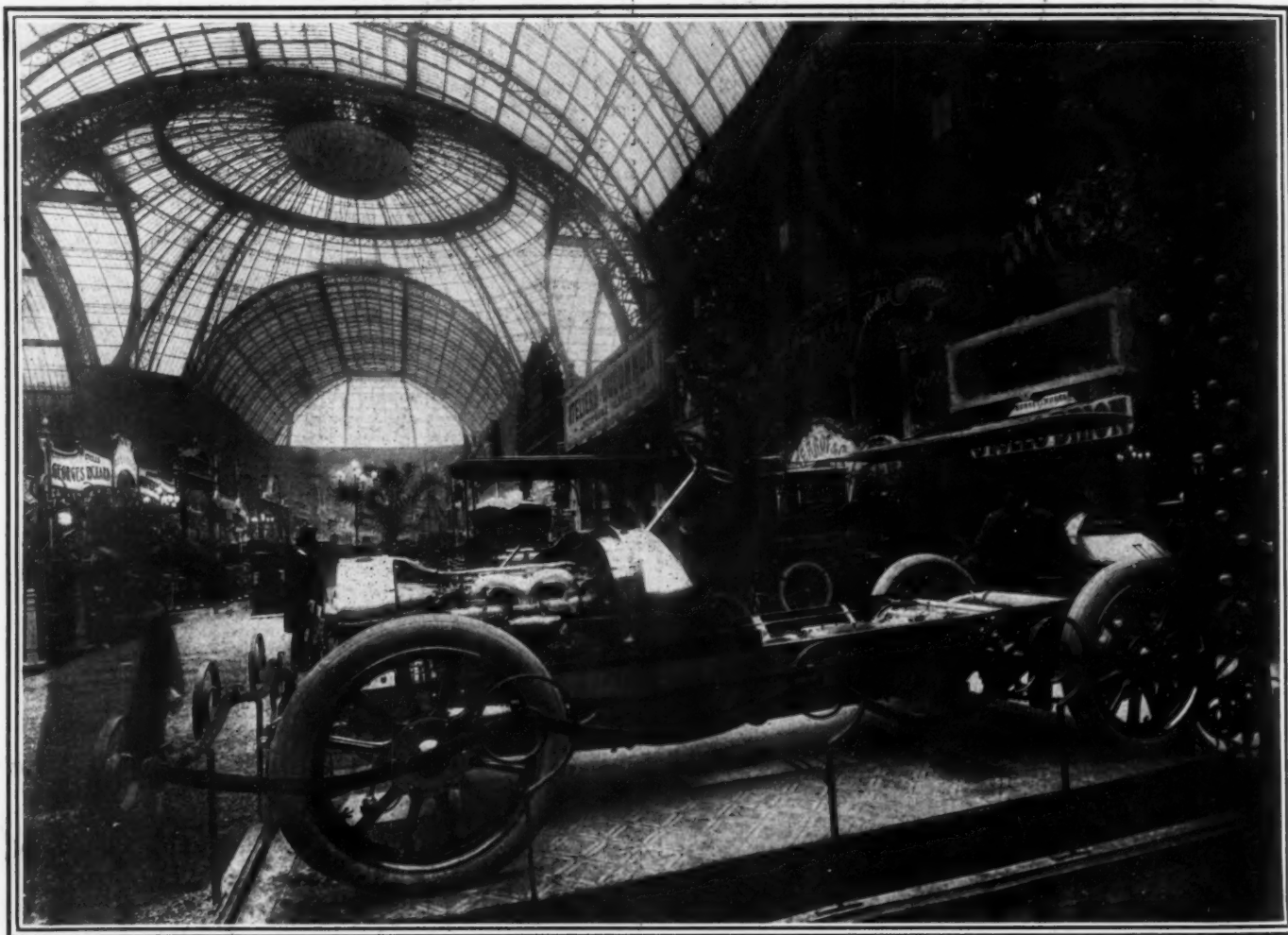
of powerful simplicity, is not a surprising exhibit of mechanical departures. It has a 24-28-horsepower engine with two sets of twin cylinders. The inlet valves on top of the cylinders are mechanically operated by tappets from the same camshaft as the exhausts, which are of the usual type. The ignition is by high-tension magneto. The governor, which is enclosed in the crankcase, acts upon a piston in the carbureter, which is automatic. A foot accelerator can stop the governing action. The water is circulated by a gear pump and cooled by a honeycomb radiator. The clutch is of the cone type, self-contained as to end thrusts;

The engine is about 30 horsepower, with four cylinders and symmetrical valves on each side of the cylinders, both mechanically operated. The ignition is by low-tension magneto. The water circulation is by centrifugal pump, and the engine is lubricated by an eccentric pump without either checks or valve, giving two atmospheres of oil pressure to all bearings, even the connecting rod knuckle on the piston pin. This pump has been applied on steam engines for many years by this concern, which considers it one of the best features of the car. The radiator is ventilated by a fan with a spring jockey pulley. The carbureter is

a sub-frame. The entire chassis is of pressed steel made entirely at the Belleville works. A large and perfectly enclosed apron covers the entire mechanism most efficiently, being practically dirt tight. The dashboard does not exist, its place being taken by the gasoline tank of roughly twenty gallons capacity, while the entire water supply is carried in the radiator.

One small point which goes to show the carefulness of design is the interposition of fiber pads between the springs and the spring blocks, to add to the life and ease of the springs.

The knuckles of the front wheels are of



CHASSIS OF THE DELAUNAY-BELLEVILLE, AN INTERESTING NEW FRENCH CAR, SHOWING FULL LENGTH DUST PAN UNDER FRAME.

the spring is easily getatable and removable, and the whole clutch is on a separate shaft easily removed from the car. The frame is stamped steel. There are four speeds and reverse and ball bearings throughout, except at crankshaft. Both hand and foot brakes act on the rear wheels, the hand brake being on the hubs and the foot brake on the chain shaft.

DELAUNAY-BELLEVILLE MAKES A HIT.

Another great engineering concern is the Delaunay-Belleville, the well-known boiler and steam engine makers, who this year start into the automobile trade by making a tremendous hit, having in all respects one of the finest cars at the show.

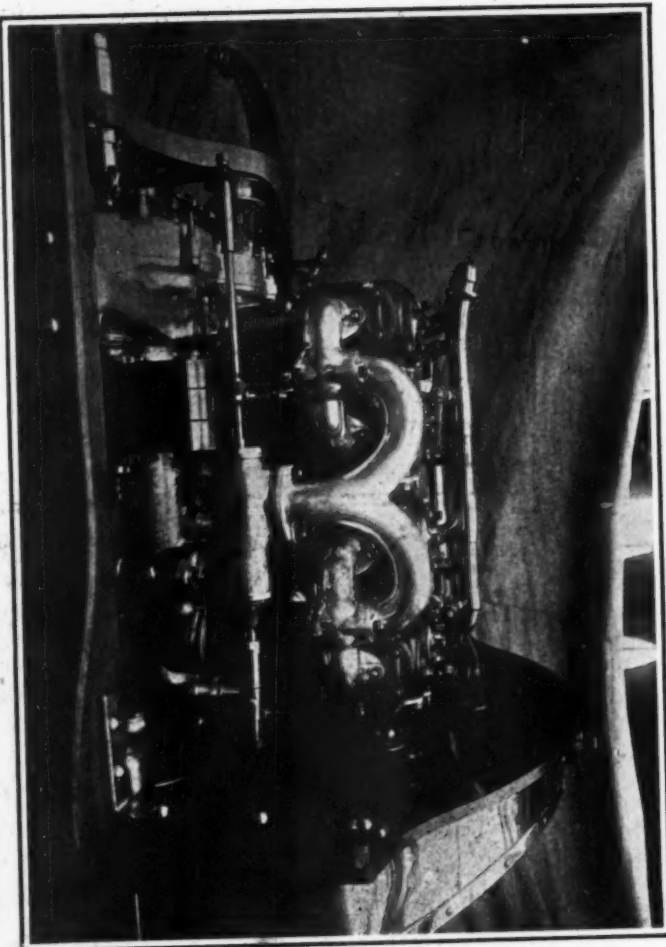
automatic and somewhat similar to the Mors and the Richard-Brasier as to the means of supplying extra air. All the articulations and all the levers are joined by ball joints, thus giving the connections great ease, as well as great security.

The car is fitted with two brakes, both acting on the clutch, a foot brake acting externally on the countershaft and an internal hub brake operated by the hand lever. The clutch is of ordinary cone type, the cone being made of aluminum to decrease its momentum and facilitate the change of gears, of which there are four, besides the reverse. The engine is carried on the frame direct, while the transmission is carried on

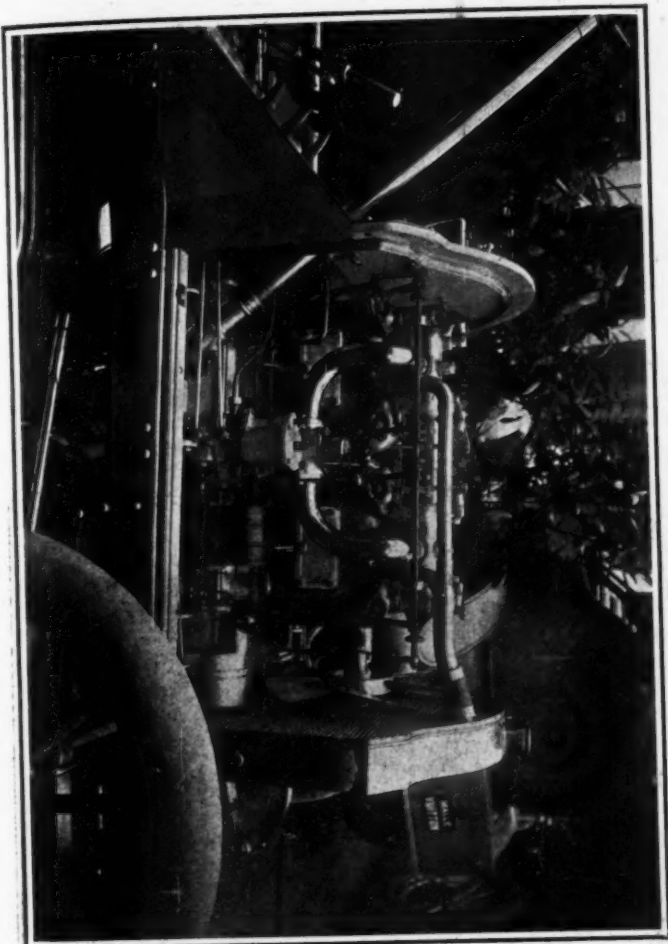
the Mercedes type and are protected by sheet-metal covers, making them mud proof.

The other cars shown, which are of minor interest, but in which many small details of interest are to be found, will be discussed in a subsequent letter.

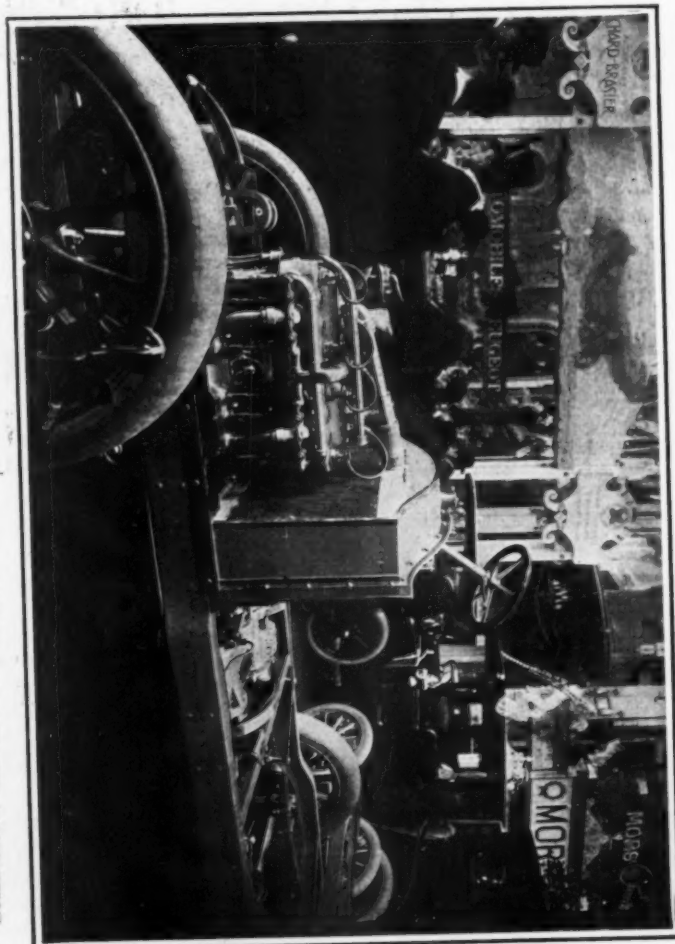
No doubt the enormous proportions which the automobile industry has assumed in France accounts in a large measure for the fact that of the world's total annual production of rubber, amounting to about 50,000 tons, one-eighth, or 6,250 tons, is consumed by France. Brazil alone exports 30,000 tons annually, and France took one-fifth of this last year.



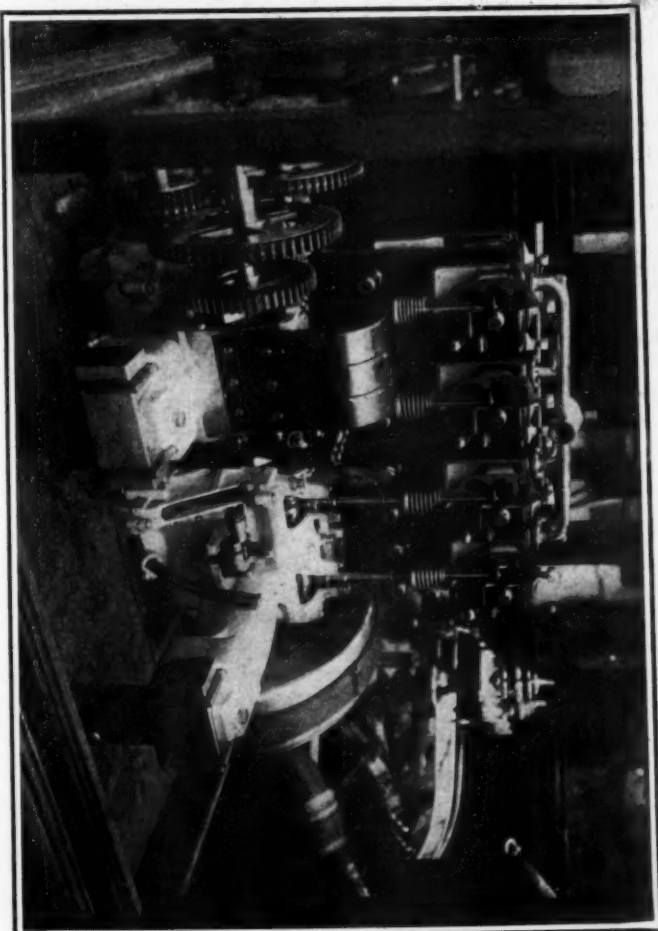
INLET SIDE OF DELAUNAY-BELLEVILLE ENGINE, SHOWING HUGE SIAMESE INTAKE PIPES.



INLET SIDE OF NEW DIETRICH ENGINE SHOWING IGNITION SYSTEM.



VALVE SIDE OF 15-18 H.P. RENAULT, SHOWING DASH RADIATOR AND WATER CONNECTION.



SECTIONED FULL-SIZED C. G. & V. MOTOR IN GLASS CASE, DRIVEN BY ELECTRIC MOTOR.

American Car Exhibits in the 1904 Salon.

Special Correspondence.

PARIS, Dec. 16.—One of the features of the 1904 Salon is the exhibit of American cars, which, though few in number, are of high quality and draw crowds of spectators. The exhibits are those of the Pope-Toledo and Pope-Waverley cars on one stand and the Oldsmobiles on another, both having good positions in the main hall. Colonel Pope has been accused of bringing coals to Newcastle, but the coals are certainly of very good quality, and with the history of the Vanderbilt race fresh in their minds the French visitors "take notice." The

Pope bicycles, which are shown by the local agents.

The Pope vehicles attract a great deal of attention, and seem to promise good business for their makers, the prices being comparatively low considering the size of the cars. The company seems to have foreseen this success, as it has brought over a fine assortment of cars. First of all is a magnificent 50-horsepower Pullman car, lavishly upholstered and beautifully finished, which is second to none in comfort. This car, which is to be shown at Madison

any one as being very smart and likely to match with success the richest bodies for city use. This radiator has the shape of an oval, which suits nicely the special aspect of the water tubes of the Pope cooler. H. L. Pope and H. A. Leinhart, of Hartford, answer the inquiries of the public at the stand and seem to be pleased with things, while H. H. Lyttle, when not at the stand, demonstrates to prospective buyers one of the famous 24-horsepower Popes, which was brought over for the purpose.

The Waverley electrics are also very well represented at the same stand by a physician's carriage, a stanhope, a chelsea and a runabout.

At the Olds stand all the latest styles of



GENERAL VIEW OF OLDSMOBILE STAND AT PARIS SHOW.

Runabout in foreground has glass panels in piano-box body and engine is kept running by electric motor on floor under car.

exhibit of the Oldsmobiles is made by Fournier, the French agent of the builders, and there is largely a French atmosphere about this stand. The Olds is a good deal in the eye of the automobile public just now, as Maurice Fournier is making a tour of Europe in an Olds. One of the cars at the stand is labeled as identical in pattern with that used on this special tour.

The Pope exhibit is made in a large stand—in fact, it has been allotted a much larger space than many of the well-known French firms, and it is attractively decorated with an arched white and gold sign, bearing the name of the company in incandescent lamps, and by various potted plants. Just across the aisle is the stand of the

Square Garden, has been described and illustrated in *THE AUTOMOBILE*. It is a matter of interest here that, although it carries such a long body, it can go at a pace of almost seventy miles an hour in case of emergency.

A very roomy touring car is also shown with a 45-horsepower chassis. It has a side entrance and large seats, and as an open car is a fine sample of a comfortable body. Another very nice type of body is the front entrance tonneau fitted on a 20-horsepower chassis.

A 30-horsepower chassis is exhibited polished up and arranged to show the mechanical features of the Pope cars. It possesses a radiator of a new shape, which strikes

Oldsmobiles are shown, with canopy top, front glass and wheel steering. The new runabout and the still young ancestor, with the sledge front and lever steering, are also shown. One model is shown with glass panels to allow the public to examine the machinery.

Although America did not send many representatives, those that came are worthy ones, and the American colony here, as well as visiting American automobilists, have good reason to be proud of their builders.

Does Newlywed get much pleasure out of his auto?

Oh, yes. His wife doesn't know he's got it yet.—*Judge*.



MAKING PREPARATIONS IN THE RIVER SEINE FOR THE AUTO BOAT RACES HELD DURING THE PARIS AUTOMOBILE SALON. On the right is the Serres de la Ville, a building erected for the World's Fair of 1900 and now used as an annex to the Grand Palais for exhibits of Auto Boats, Machinery and Commercial Motor Vehicles.



NIGHT ILLUMINATION INSIDE OF THE GRAND PALAIS DURING AUTOMOBILE SALON, DECEMBER 9 TO 25. LOOKING DOWN THE MAIN HALL. | Note skyrocket effect of arched lines of light radiating downward from central dome.

Convenience and Comfort in Show Cars.

Especially Reported for THE AUTOMOBILE.

PARIS, Dec. 16.—There is a remarkable one cannot but be struck with the fact that enormous advance has been made in all that tends to make touring a luxury. The average automobilist is satisfied with the speeds already attained and now seeks perfection in strength of construction, ease of control and immunity from breakdown. The outcome of this demand for more comfortable cars is that chassis are increased in length. Many cars are shown with wheelbases of upwards of ten feet. At the same time it is admitted everywhere that cars have reached their limit in length, the advantage gained by a long wheelbase being more than counterbalanced by the difficulty in turning on winding roads, climbing awkward hills, or moving about in city traffic. In order to overcome—partially, at any rate—this difficulty, nearly all the 1905 models are built much narrower at the fore axle than at the rear.

Another very general move is towards springs of increased length; the old short springs, which meant bumpy riding, have almost entirely disappeared. Some makers have, in addition to the two front and two rear springs, a third spring, placed transversely across the rear of the chassis. This is the case in the Delaunay-Belleville and in the new model of the Mors 40-52-horsepower chassis, a splendid piece of mechanical construction. The brake power has also been increased on the Mors chassis, the braking system now consisting of compensating pedal brakes on the rear wheels (the pedals being so arranged that both can be operated by one foot) and a hand brake acting on the differential, the braking surface of which has been largely increased. M. Charley, of the Mercedes firm, has adopted the American idea of a compressed air brake, which by means of the movement of a lever on the steering wheel will apply power to two brakes on the front hubs and two on the rear hubs.

Steering pillars have been given a little more rake. On the Pope-Toledo cars the steering wheel is hinged, lifting up to allow the chauffeur to reach his place more conveniently. On the Clément cars the spark and gas are regulated by turning two sectors placed in the circumference of the steering itself, and on another car the spark and throttle were controlled by an extra spoke in the wheel.

There appears to be a tendency to increase the size of the gasoline tank on touring cars. In the new Westinghouse automobile it has been placed right at the rear of the chassis, as in the Mercedes pattern. In the Delaunay-Belleville the gasoline tank, having a capacity of about seventy-five liters, is placed behind the dash, under the sloping footboard, the polished wood and brass dash and the circular bonnet giving this car a very smart appearance.

The complete dust pan of the Delaunay-Belleville, extending right up to the rear axle, is claimed to be most effective in keeping down dust. Exhaust pipes are bigger and radiators generally larger than in previous years' models. It is observed also that on all the larger cars there seems to be a tendency to substitute the running footboard for the hanging step.

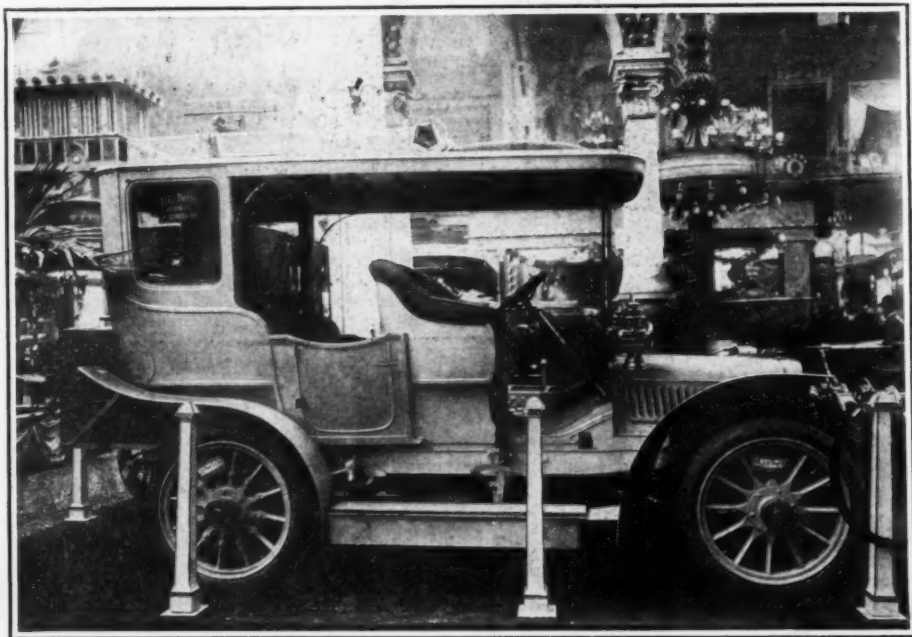
A PARLOR SLEEPING CAR.

Luxurious traveling cars constitute an important feature of the show. Probably the most completely fitted automobile ever built is one shown at the de Dietrich stand. The interior of the car is divided into two parts. In the fore part are four arm-chairs, two of which are fixed, while two are of the railroad revolving and reclining

On the opposite side of this little cabin is an ice-chest, a cupboard for photographic appliances, a wardrobe, a small cooking range heated by spirits, a drawer for table linen and a chest for food and table service. This little room has also been so arranged that it can be closed up to serve as a dark room.

A LUXURIOUS CANOPY-TOP CAR.

At the Decauville stand a most luxurious 24-28-horsepower covered phaeton touring car is exhibited. It has a wheelbase of 110 inches. There are roomy side entrances, and the rear seat will hold comfortably three persons. An extra seat is fitted in front of this; it is in two parts, a padded back extending the full width of the car, fitting into grooves at each side of the canopy supports. When not required this back is slid up in its grooves until it reaches the canopy, when it is turned and held secure in longitudinal grooves close

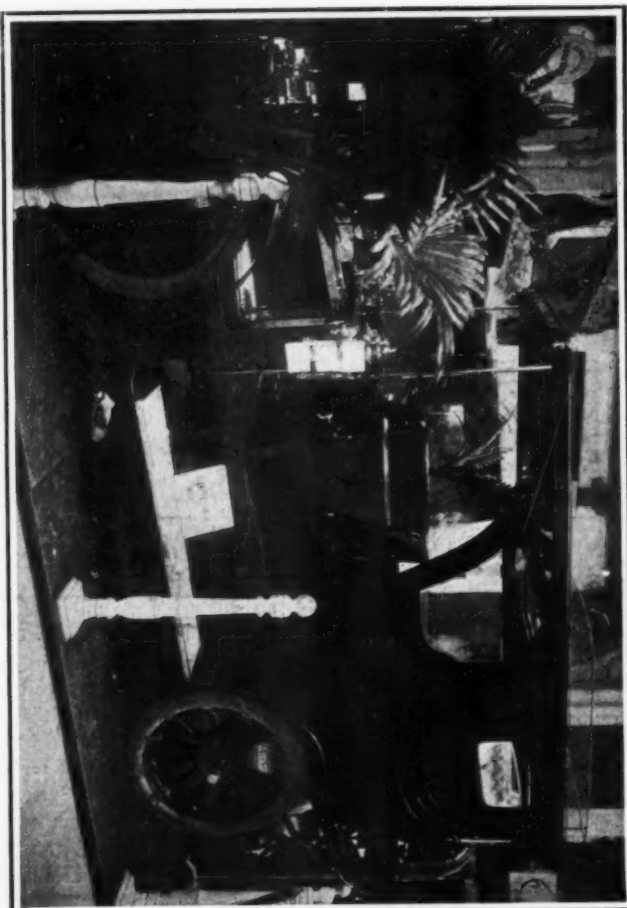


DECAUVILLE DOUBLE PHAETON, WITH SIDE ENTRANCE AND FULL BACK.

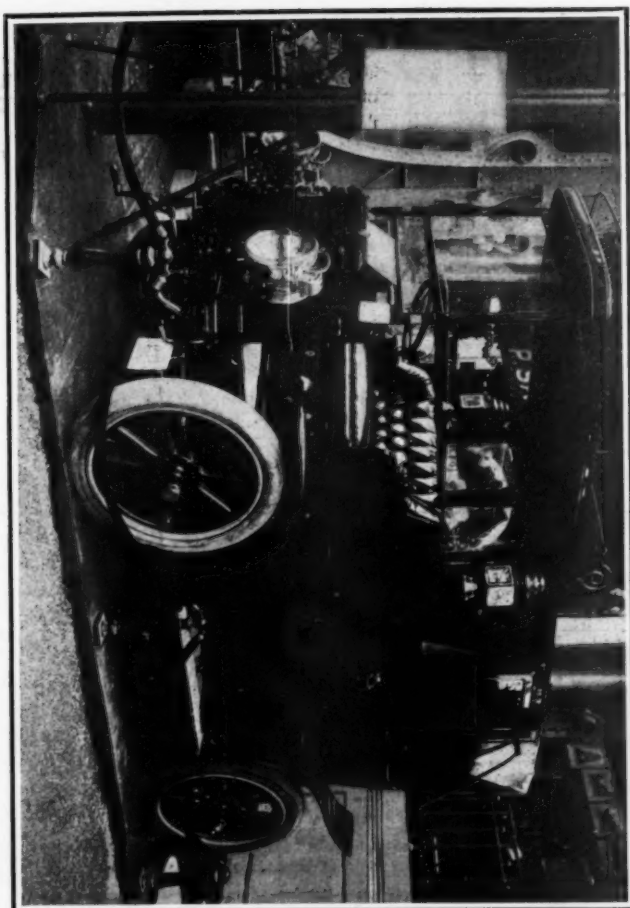
Emergency seat lifts up from floor in front of rear seat and back for this seat slides down from under the roof in side slots. Note large tool-box under side step and special luggage boxes strapped on shelf behind.

type. They are so disposed that two chairs can be brought together, the backs lowered so as to make a couch and a mattress unrolled out of the back of one. Two folding tables, which are completely hidden away when not in use, can be opened out for reading or card playing. At the head of each reclining chair there is a small electric lamp, and hidden away in different parts of the room are pockets for note paper, cards, a revolver, medicines, and other small articles. A double folding door with richly carved panels communicates with the rear portion of the car. Here, in a space of 1 meter 50 centimeters by 80 centimeters, the designer of the car has found space to fix up a wash basin with water supply, a toilet table with three mirrors and a seat, a closet flushed automatically, a linen cupboard and a wardrobe.

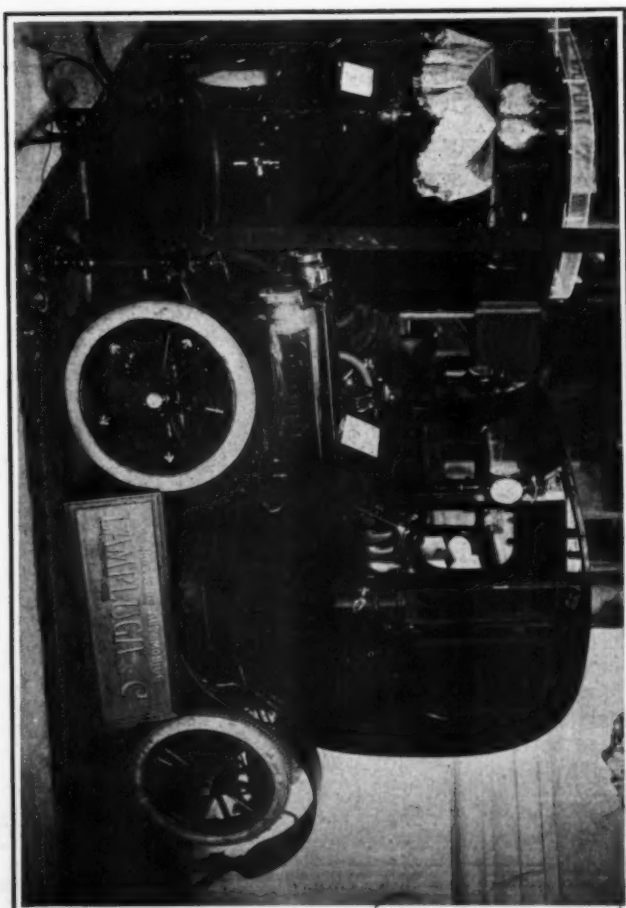
to the roof. The seat is hinged, and when not in use is folded down behind the front seats. It is entirely out of the way, its supports fitting into grooves in the floor boards, and the whole can be fitted up or stowed away in a moment. The canopy extends right over the driver's seat. The rear and sides of the car are closed in and fitted with windows letting down into pockets. The whole of the sides of the car can also be covered in by means of shades fitted on rollers under the canopy top. There are running-boards fitted with rubber mats bound with brass, which form the lids of very spacious tool boxes. Ample provision is made for carrying luggage. A rail runs round the sides and back of the top, allowing a trunk to be securely strapped on. Behind is a platform hooked on to the car and held horizontally by two side stays, on



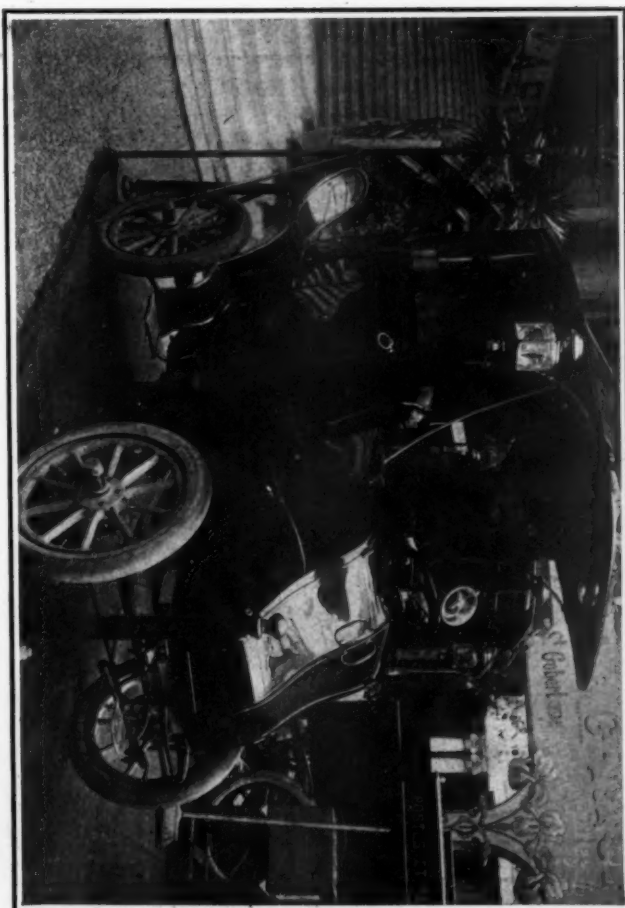
French Cab Body by Beuzelin, with Side Entrance and Swivelling Front Seat.—Note glass hinged under top which lets down when front seat is closed.



Delangere & Clayette Berline Body, resembling old-fashioned private stage, motor driven.—Four-cylinder motor under front seat, located "noye."
SOME INTERESTING TYPES OF FRENCH CLOSED BODIES OBSERVED AT THE PARIS SALON, INDICATING THE STRIVING AFTER COMFORT AND LUXURY.



Curved Back Cab Body by Lamplugh, with Inside Drive and Steer.—Suitable for physicians, J. T. J. Makers are trying to push this type.



Electric Coupe by Milde.—Note folding doors, handsome cab style, and step in front of driver, who sits outside.

which can be carried two trunks, especially shaped to fit the rear of the car, thus obtaining the maximum of space with a minimum of projection. The upholstery of the car is in pea green leather; the chassis and body are painted gray, with blue beading, giving the car an exceedingly smart appearance.

On the same stand is another handsome carriage—a 40-50-horsepower *berline de voyage* with 110-inch wheelbase. The interior will seat five persons, two on the rear seat, one in each of the two bucket seats, which are swiveled and sliding, and one folding seat. Lockers are fitted under the rear seats; there are two electric lamps in the roof and a speaking tube to the driver. The car is well lighted by side, rear and front windows, those on the side being let down into pockets, making the interior airy in summer. The upholstery is in gray broadcloth. There is a glass shield in front of the driver, hinged to the roof so that it can be swung up out of the way.

THE POPE PULLMAN ATTRACTS ATTENTION.

At the Pope stand the handsome Pullman car attracts considerable attention. It is a four-cylinder 50-horsepower car with a wheelbase of ten feet. The interior, handsomely upholstered in gray broadcloth, seats three persons on the rear seat and two on the individual seats; a strong table can be opened out in the center for serving refreshments. There are large side, front and rear windows, which can be let down into pockets. A speaking tube communicates with the driver.

Another very handsome car is the 35-horsepower Panhard with touring body by Labourdette, which is owned by the Grand Duke Cyril.

The Mors company exhibits a 24-horsepower *berline de voyage* with most of the conveniences supplied in the cars already described. Indeed, these luxurious traveling cars are not confined to one or two stands only. Communication with the driver is fitted on nearly all closed cars and is by means either of a speaking tube or a call bell.

Not many cars with heating apparatus are seen. In a limousine at the Rivot stand a heating apparatus consisted of a flat warming pan fitting in the floor boards, into which passed the hot gases from the exhaust pipes. Provision was, of course, made for opening or closing the feed pipe at will.

ELECTRIC HOSPITAL CAR.

An interesting vehicle was an electric hospital car shown on the Mildé stand. The driver's seat was placed in the ordinary position in front, and entrance to the car, the wheels of which were shod with solid rubber bands, was by means of side and rear doors. The rear entrance consisted of double folding doors, the lower one letting down and the upper one being raised. There is ample space for a hospital bed, additional length being obtained by

making use of the space under the driver's seat. A folding seat is fitted to the side door, and the car is lighted by side and front windows. A medical chest was carried on the top.

At the same stand is an electric brougham, with driver's seat protected by light folding doors opening like those on a hansom cab, the step being placed in front instead of on the side.

REAR ENTRANCE DEAD AS A DOOR NAIL.

There are more novelties in car bodies this year than in anything else pertaining to automobiles. Mechanical contrivances have reached a fixed stage, and engineers have made few radical changes. But in body construction everything has changed. With the increased length of chassis much more roomy bodies are now fitted than was the case a year ago. A striking point is the disappearance of the tonneau body. Not that the tonneau no longer exists, but the old type with bucket seats in front and rear entrance is as dead as a door nail. Side entrances are everywhere in favor. It is obvious that a side entrance cannot be fitted without materially increasing the length of the chassis, and to obviate this many ingenious contrivances have been adopted. On the touring car built by the Westinghouse company, one of the latest arrivals in the automobile world, the wheelbase is 2 meters 70 centimeters, but by means of two angle swivels the two front seats can be raised, leaving a very roomy entrance. The operation is performed by opening a very small side door, on which the front seat hinges forward. Entrance can be from either side, the whole arrangement working very easily and being solidly constructed.

This car possesses many points of interest to the tourist. There is easy access to the driver's seat from the steering side of the car; an advantage not found on all cars. In many respects the chassis is built on the Mercedes model, having a large gasoline

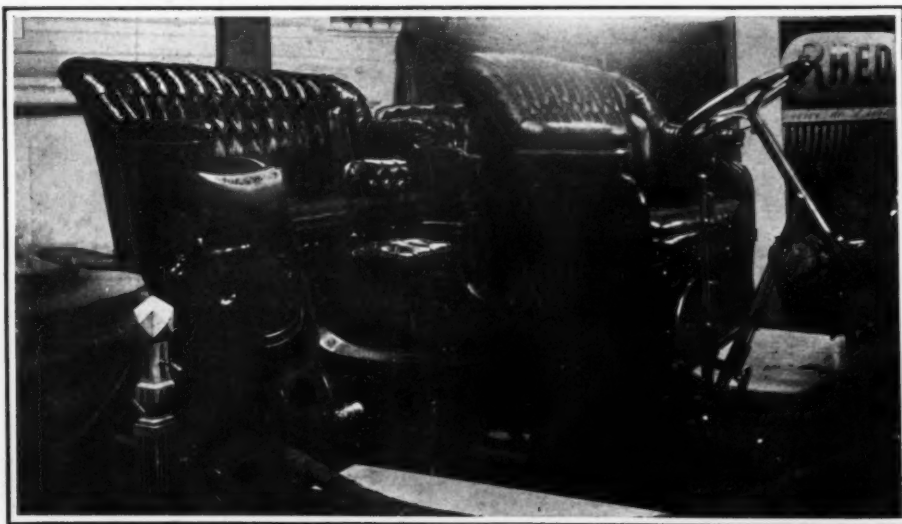
tank placed under the rear of the frame; the sprockets are very close, permitting the use of short chains. It is fitted with a honeycomb radiator, raked steering pillar, and nothing is carried on the dashboard but the lubricator, and even this can be suppressed if desired. The pedals, though not projecting very far, have long leverage, making them easy of action. Altogether this car has an exceedingly smart business like appearance.

A few other firms also have adopted the same kind of door as described on the Westinghouse. At the Darracq stand a touring body was shown with two bucket seats in front and the usual inside or rear seats. The left front seat was pivoted on its right fore edge, leaving a wide entrance on one side of the car only. This style of entrance is not confined to one firm, but plain, hinged side doors are more numerous.

At the Decauville stand a brougham was shown with a revolving entrance of novel construction. The car is entered by the left hand side only, the handle being at the left front corner. The front seat is divided into two parts, the left half being hinged, so that one-half of the front seat of the car swings onto the platform, leaving a wide front entrance.

DOUBLE PHAETON BODIES POPULAR.

Covered cars are largely represented this year, the most popular type appearing to be the double phaeton, with enclosed back and short sides, hinged glass shield in front of driver and side screens that can be readily raised and lowered. At the stand of the Automobile Industriel a covered phaeton of this class is shown with plate-glass windows, capable of being raised or lowered, between the front part of car and the rear seat. A waterproof screen fitted on rollers under the edge of the canopy can be drawn down, extending from dash to the rear of the car, converting an open car into a closed vehicle, the rear portion being entirely closed by means of the transverse windows.



RHEDA DOUBLE PHAETON BODY.—Note wide door and emergency seats in front of rear seat, one folded down forward out of the way and practically out of sight.

The screen is fitted with celluloid windows.

At the same stand is a cab suitable for doctors. It is a two-seated vehicle with steering wheel and controlling levers inside the car. Entrance is by means of doors like those on hansom cabs. A glass screen can be put up between the doors and top of cab, entirely closing in the carriage. A small platform behind is fitted with a convenient locker. This little cab has a most handsome appearance, having turtle-back roof and being well finished.

Close by, at the Beuzetin stand, is a handsome limousine body with two seats in front and room for two or three persons on the rear seat. The left front seat is pivoted to admit to the interior of the car; when inside, a large glass screen can be let down from the roof to close the front of car. A narrow wooden platform occupies the space between the bottom of the screen and the back of front seats, and can be closed or left at any angle desired. When closed, an open carriage is converted into an entirely closed one. One thumb-screw operates the whole affair.

CABS WITH INSIDE STEERING.

Several cabs with inside steering are shown. At the Sage stand, for instance, is an 18-22-horsepower coupé limousine, with four-cylinder motor and chain drive. Inside is a seat for two persons, with steering wheel and levers on the right. Entrance is by side door. The gasoline tank on this car is in the space between the rear of the car and back cushions, and is very conveniently filled from the rear. Behind is a little platform, on which is a seat for a domestic. When not in use this seat folds down and enters into the case on which it stands, disappearing entirely from view. A couple of trunks of good capacity are also fitted in this chest.

At the Audineau stand are exhibited some fine specimens of carriage work. A landaulet limousine, 2 meters 40 centimeters from dash to rear of body, has a roomy interior, with seats for two at the back and two revolving seats with backs to face in any direction; even with four passengers there is ample room for the feet, the space under the driver's seat being open. When not in use the two seats fold up on the side of the carriage between the doorways and rear seats. The carriage is fitted with plate-glass windows, the front one being in one piece, capable of being lowered into a pocket. Owing to the weight of this window springs are being fitted in the pocket to facilitate raising it. The carriage has a collapsible back, running footboard covered with rubber bound in brass and tool boxes underneath it.

Another car on this stand remarkable for its high finish is a brougham, the rounded aluminum back of which is all in one piece. Here no hinges are visible on the outside, a kind of pivoting hinge being employed entirely inside the body work. The same thing can be seen on a brougham at the

Bargin & Beckerich stand. Here, although it is a closed carriage, there is only a half door, the upper part being done away with, and in its place two steel rods fitted with grooves for the window have been placed. Felting along the edges of this window frame prevent it rattling, and suitable beading is fixed above and around the side of the doorway to prevent rain from trickling in.

The Lamplugh firm has two pretty little broughams steered from the inside. The front of the carriage carries nothing but the radiator, lamps and horn, the horn piercing the front and being nearly flush with it. The carriage has a handsome rounding off top. Inside is an electric light; there are plate-glass side and front windows, opening or closing at will. A shelf runs along the front of inside of carriage and below it is the lubricator.

DIVISIBLE DOUBLE PHAETON.

A nice piece of body work is shown on the Driquet Ainé stand. This consists of a



MERCEDES SIDE ENTRANCE, SHOWING FRONT SEAT TILTED FORWARD.

double phaeton with dais and circular-ended back with plate-glass windows. Behind the driver's seat are two revolving bucket seats, which can be made to face forward or reversed toward the rear seat, making a vis-à-vis body. The entrance is by side doors, with handles toward the rear of the car. There is just sufficient space between the two bucket seats to allow passing to the rear seat, and in whatever way these seats are turned they align perfectly with the body of the car. Behind the front seats is a longitudinal glass screen, consisting of three panels, which can be lifted up individually against the top or as a whole. There is also a plate-glass screen on the dash. The sides of the car are protected by roll screens, making the car entirely closed in.

On the Gillotte stand is a limousine which can be converted into an open touring car with side entrance. To make the change the upper part is unbolted from the lower. When used as a limousine it has extending roof over the front seats with hinged glass shield.

NOVELTIES IN HOODS.

Merville Fils show on a double phaeton body a most serviceable looking hood, which extends the whole length of car, passing over the glass shield by an inch or two and being strapped down to the lamp brackets. The screen, by the bye, is divided longitudinally into two parts, the upper part folding over the outside of the lower part. The frame of hood consists of two stays attached by a pin to a bracket just behind the front seat, and the rear section of three stays attached by a bolt and nut behind the middle seats. The feature of this frame is that it can be easily mounted and dismantled.

Lemoine & Naffrechoux are showing hood frames, the feature of which is that they need no straps. On a long touring car the apparatus consists of the usual two skeletons, the fore one of two and the rear one of three ribs. At each side of the car are two half-circular sectors, on which the metal foot of each rib works. The under side of the sector is notched to receive a catch from the rib. A flexible wire cable runs from the catch at each side and is attached to a small thumb lever on the middle of the hood, one turn of which will release the catch and allow the hood being moved to any position. The same apparatus is also fitted as a dust shield for hanging over the back of an open car.

DE DION IMPROVEMENTS DEMONSTRATED.

One car at least at the Paris Salon has proved its touring qualities before coming on exhibition. This is a 15-horsepower four-cylinder De Dion-Bouton touring car. For several years past the De Dion firm has been in the habit of sending off its new cars on a tour of several thousand miles, in order to test the improvements and changes made. This year the car set off for a 5,000-mile run around Europe, piloted by Cormier, who has made himself quite famous by these lengthy tours. The journey was not without difficulties, and after struggling for more than two months with rain, snow, hail and wind, not to mention difficulties of a more human origin, Cormier has returned safely to Paris in time to take his place in the seventh annual automobile show. The car is a tonneau with folding hood, fitted with Dunlop tires, carrying an extra large gasoline tank in front of the dash and weighing altogether 1,800 kilos.

The automobilist who came near running down Speaker Cannon did not stop to hear Uncle Joe's ejaculatory remarks. There are some things too formidable for even the driver of a motor carriage to face.—*Providence Journal*.

Small Cars at the Paris Show.

Staff Correspondence.

PARIS, Dec. 16.—There is a remarkable scarcity of small cars at the Paris show—that is, cars that would correspond in price and size to our regular runabouts. It is essentially a big-car show. French makers have neglected the small car in later days, though there is a considerable construction of cars that, while small in size, are built upon the lines of their bigger brothers, of costly design. Such cars run from about 8 to 14 horsepower, are rarely fitted with less than two cylinders and are styled here the *voiture légère*. In this class are such makes as the Renault, Clément-Bayard, De Dion and Cottreau.

MINERVA 6-HORSEPOWER RUNABOUT.

The runabout proper, or *voiturette*, is of much greater interest from the fact that it comes in direct competition with our own familiar small cars. Of this type the lightest vehicle shown is the Minerva, made by the concern which was the pioneer in the motor bicycle field and gained an enviable reputation with its small engines. This car is notable for its short wheelbase, its small wire wheels and general toy-like appearance, which last is very unfortunate. The body has two bucket seats and is fairly comfortable, but the lack of comfort of the suspension counteracts a good deal of this quality. The engine, which is in front, under a small hood, is 6-horsepower, single-cylinder, vertical motor, with mechanical valves and enclosed flywheel—a somewhat magnified Minerva bicycle engine, water-cooled. The carbureter is a Minerva, made under Longuemare license. As a whole, the power plant is of a high standard of quality and efficiency, and deserves a much better utilization than that given to it. The drive from this engine to the change-speed gear is by chain. The transmission, which gives two speeds and reverse, is under the front part of the seat, and from it another long chain transmits the power to the differential in the rear axle casing. The steering is by wheel and is not irreversible, a rack and pinion actuating the steering connecting rod. The maximum speed obtainable by an average driver is about twenty miles an hour on the level. The frame of the car is tubular.

WELL MADE LOW-PRICED CAR.

Much better value is shown in the L. B. car, a new make advertised under these initials, and which seems to meet with great appreciation. The standard car is fitted with a De Dion 6-horsepower engine, although any other similar motor will be fitted to order. This is placed in front, under a very smart hood. The frame is neatly and strongly made, the side members being of armored wood in their central part and having their front and rear ends of pressed steel well jointed, with provision for unequal expansion; the cross members

are of strong armored wood. The makers also fit a 9-horsepower engine, and in that case the frame is all of pressed steel.

The change-speed gear is of very compact construction, small and strong. It is bolted on the angle steel sub-frame, is of the sliding gear type, with three speeds and reverse, the high speed driving direct. The shafts are one above the other, the live shaft being practically horizontal when the car is under usual load.

The rear axle, which is of cast steel, is mounted on ball bearings throughout and very strongly braced. The steering is by worm and sector, with an inclined wheel. Ignition is by accumulators and coil and is carefully devised.

There are two hub brakes and one on the live shaft, and the parts for all are exactly the same. This point is worthy of notice considering the greater facility for the getting of spare parts.

The clutch, which is well designed, can be taken entirely out of the car without touching any other part of the engine or speed gear. The water circulation is by a centrifugal pump, friction driven. The wheels have wooden spokes and are of uniform size for convenience in fitting spare tires. The radiator is of oval shape, built up of fine tubes. Lubrication is by a force-feed oiler, which the driver is to operate every twenty miles or so, and which lubricates the car throughout without any stoppage.

The rear suspension is by three springs, two placed lengthwise and the other crosswise, which gives a great increase in comfort. The speed is thirty miles an hour for the 6-horse model and thirty-five for the 9-horse. The French prices are respectively 3,900 francs (\$780) and 4,800 francs (\$960). The wheelbase and tread are of generous dimensions.

LA FAUVETTE LIGHT CAR.

The La Fauvette is also a light car which for outside appearance could hardly be beaten, but the price gets too close to the large car values. It is driven by a De Dion or Aster 6-horsepower engine through a three-speed-and-reverse sliding gear with direct drive on top speed and live shaft drive. The frame is armored wood; the hood and radiator are somewhat on Panhard lines and being of good size gives a look of power to the vehicle; the wheels are artillery type of equal size front and rear. One of the features of the car is the reasonable size of the chassis, allowing the owner to fit either a small tonneau body or a closed body with inside control. The wheelbase is close to seven feet and the tread 48 inches. The total length is ten feet.

GREGOIRE ONE AND TWO CYLINDER CARS.

A very interesting car is the Gregoire, which is made in either one or two cylin-

der, 6-horsepower, at a fair price. The general description is the same for both models. Pressed steel frame, artillery wheels of equal size, irreversible steering, thermo-syphon circulation, combined radiator and tank in front, three speeds and reverse by sliding gear, brake and differential enclosed in change-speed gear-case, double chain drive, straight axles, all brakes internal, one on differential casing and one on each rear hub of large size.

The 6-horsepower single-cylinder engine has a bore of 100 millimeters for a stroke of 120, and the two-cylinder of same power has a bore of 80 millimeters by a stroke of 110. The chassis of the single-cylinder car costs in Paris 3,100 francs (\$620), and that of the twin-cylinder 3,600 francs, or \$720, an extra charge of 400 francs (\$80) being charged for a two-seated body. The engines are fitted with mechanical valves of good size and accumulator ignition.

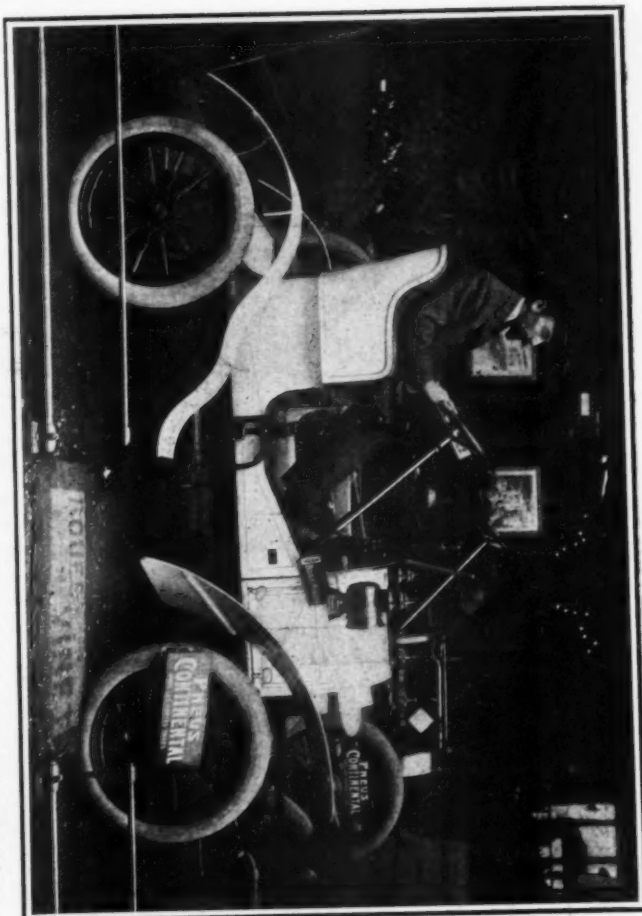
WOLSELEY VERTICAL ENGINE CAR.

An English novelty and an unexpected one is the new 6-horsepower Wolseley light car with vertical cylinder. It seems that the old champions of the horizontal cylinder are all giving it up slowly, since there is not one maker left now in the European market making horizontal automobile engines who does not make vertical engines also—in fact, the gentleman at Wolseley's stand was not ashamed of his change and admitted proudly almost that since he had tried it he much preferred the vertical engine. And yet, as far as the engine is concerned, the design of this car is not the acme of up-to-dateness, and it can very clearly be seen by any one that the engine is too much on the lines of a horizontal engine turned one end up. Yet it is a step in what is called the right direction in France and is to be noted.

As to other features, the wheels are artillery type, 28 by 3 inches, the frame of pressed steel, the ignition by accumulator and coil, the gearing of the usual Wolseley three-speed type, giving seven, thirteen and twenty miles an hour steadily, with a maximum in short runs of twenty-five. The clutch is of the ordinary cone type. The rear axle is a very stiff, single chain-driven live axle. The brakes are ordinary externals. The car is sprung on a transverse rear spring and four usual semi-elliptics, very long and flat.

BAILLEUL 6 AND 9-HORSEPOWER CARS.

Another interesting car is the Bailleul, which is fitted with a 6-horsepower De Dion engine, or any other similar engine at customer's choice. The frame is built of tubes, and on the 9-horsepower car, which in all other respects is identical to the 6-horsepower model, a stamped steel frame is supplied, if preferred, without any extra charge; the tubular is, however, the standard. The change-speed is of the sliding gear type, with three speeds and reverse and direct drive on high gear, said to climb any hills up to 8 per cent. on the high gear.



Gregoire 6-Horsepower Runabout, with pressed steel frame, three speeds and reverse, and chain drive. Price, \$700; chassis only, \$520.

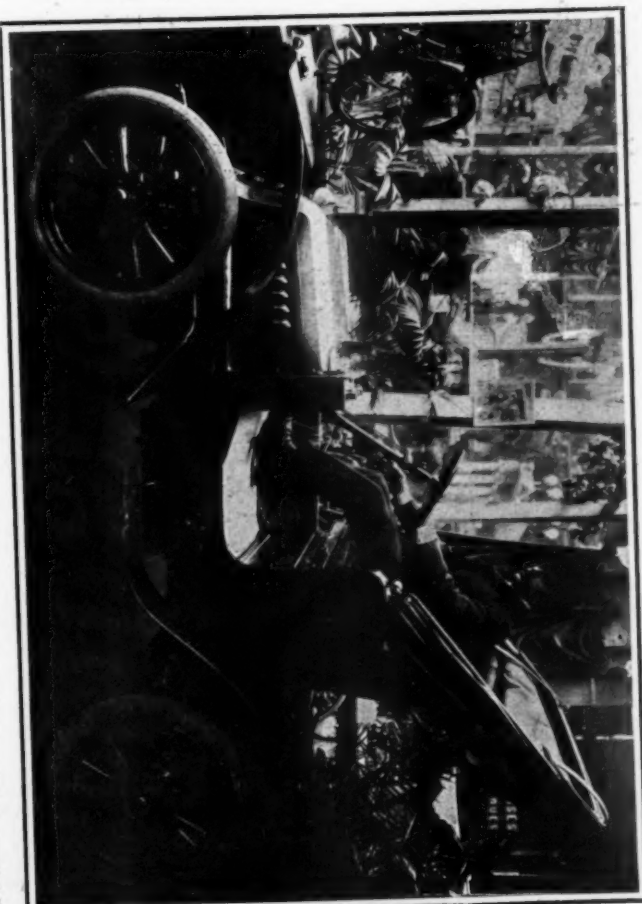


Minerva 6-Horsepower Voiturette, with tubular frame, mechanical valves, water cooling, two speeds and reverse.

ATTRACTIVE STYLES OF LIGHT, LOW-POWERED FRENCH CARS PATTERNED AFTER HEAVY TOURING CARS BUT SELLING AT LOW PRICES.



Prosper Lambert 6-Horsepower Small Car, with engine of his own make.



La Fauvette, having armored wood frame, and driven by 6-Horsepower De Dion engine. Price, complete, \$1,200; without top, \$850.

The transmission from the gear-case to the rear axle is by a propeller shaft with a special joint. In this joint the pegs at the end of the driver and driving shaft do not revolve in bearings, as in the usual construction, but in a long steel sleeve with four longitudinal grooves, so that all action of the springs causing changes in the distance of the gear box to the axle is taken up in the joint itself, thus avoiding, according to the maker, any tendency to seizing.

The brakes are on the hubs and the transmission, as usual, and do not possess any special features. The ignition is by jump spark and the cooling by thermo-syphon with finned tubes. The bearings are on balls throughout, except in the engine, and are of remarkably large size considering the power of the car. The wheels are of the artillery pattern and are shod with Michelin tires, although the price is very low for the value, since it is only \$600 for the car as

with bucket seats, provision for a large trunk or sample box at rear, sometimes spider seat, wheel steering and hub and shaft brake.

In no instance, except on the Oldsmobile, which it is unnecessary to describe here, are lever steering and planetary speed gear used, while there is not in any size of engine any case of air cooling to be found. In fact, even many 3-horsepower motor bicycles on exhibition are water-cooled.

BANQUET TO AMERICANS.

Trade Visitors to Show Entertained by Continental Tire Company.

Staff Correspondence.

PARIS, Dec. 14.—Probably never before has there been a social event in the French capital at which so many Americans in the automobile trade sat down to dinner together as at the banquet given by the Conti-

the trade in a French hotel. W. Tischbein, chairman of the Continental Tire Company, of Hanover, made a very pretty speech of welcome to the guests.

Among those present were: Sidney B. Bowman, Clément-Bayard; Albert Otto, J. S. Joseph, Rochet-Schneider; Léon Rubay, Lacoste et Compagnie; Clovis Bertrand, Clément-Bayard; H. H. Nelson, Pope-Toledo; M. Loeser, manager, Continental Tire Company, Paris; Harold Pope, Pope-Toledo; H. Leinhart, Pope-Toledo, Hartford, Conn.; Emile Stern, Léon-Bollée; A. J. Myers, Aster Motor; E. B. Gallaher, Georges Richard-Brasier; R. A. Greene, Locomobile Company; J. W. England, E. T. Birdsall and E. S. Partridge, Decauville; H. J. Halle, Allen, Halle & Company, Mercedes agents; W. T. Jones, Clément-Bayard; H. F. Donaldson, editor of *THE AUTOMOBILE*; J. L. Gibney, Philadelphia Continental agent; E. R. Thomas, Thomas automobiles; H. Chisholm, Peerless Company; H. E. Coffin, Olds Motor Works, and Georges Prade, *Les Sports*.

PHILADELPHIA SHOW.

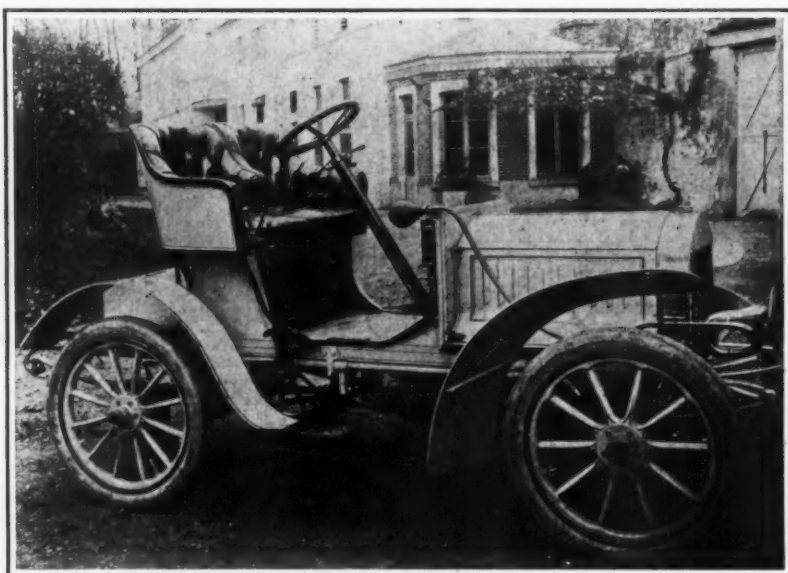
All Available Space in First Regiment Armory Taken for January 23-28.

Special Correspondence.

PHILADELPHIA, Dec. 26.—The local automobile show for 1905, which is to be held in the First Regiment armory, at Broad and Callowhill streets, during the week of January 23 to 28, is expected to be by far the largest yet held in this city. Every foot of available space has been taken by exhibitors, and, in addition, a number of the rooms used by the individual companies of the regiment have been pressed into the service. Better attendance is looked for than last year owing to the more central location of the First Regiment armory than of the Second Regiment armory, which was used for the last show. H. D. LeCato, who has managed the show for the last four years, is in charge of the 1905 exhibition. Following is a partial list of the exhibitors:

Winton Motor Carriage Co., Quaker City Automobile Co., John Wanamaker, Martin & Hart, MacDonald & Campbell, Pennsylvania Electric Vehicle Co., E. J. Willis Co., Warner Instrument Co., Charles E. Miller, S. F. Bowser & Co., Twentieth Century Mfg. Co., Atlantic Refining Co., Keystone Motor Car Co., Gawthrop & Wister, Diamond Rubber Co., Hartford Rubber Works Co., Locomobile Co. of America, C. W. Kelsey, J. L. Gibney & Bro., Cushman Motor Co., F. A. La Roche & Co., Eastern Automobile Co., B. F. Goodrich Co., Rose Automobile Co., Fairmount Engineering Co., J. T. Halsey, N. A. Petry, Charles Krauss, Neverout Lamp Co., Gray & Davis, Black Diamond Automobile Co., Ideal Stamping Co.

No one ever thinks of speaking of a "horse stable." Why, then, is it considered necessary to say "automobile garage?"



BAILLEAU 6-HORSEPOWER FRENCH VOITURETTE.

Tubular or pressed steel frame, three-speed sliding gear, live axle, and jump spark.—Chassis, \$540; complete, \$600.

shown, the price for the chassis being \$540, with \$7 extra for the tool-box at the rear.

FEATURES OF SMALL CARS IN GENERAL.

There are a few other cars shown of the same general types and of similar prices to those described in detail, but not in great number, on account of the tendency mentioned at the beginning of this article. In short, the general characteristics of the light car at the show are much more standard than in the other types of cars and are about as follows:

Vertical single-cylinder engine in front, with enclosed flywheels, separate flywheel for clutch cone and three speed and reverse sliding gear with cardan drive to rear axle. Armored wood frame, with a very strong tendency to pressed steel, which will probably be the standard at the next show; artillery wheels, low center of gravity and increased wheelbase; large bonnet and radiator with fan, two-passenger body

mental Tire Company at the Elysée Palace here last night. Nearly thirty Americans, most of whom had come over for the 1904 Salon, were seated about the beautifully decorated table at which Emil Grossman, of New York, presided in the toastmaster's chair.

It was an entirely informal gathering, with none of the usual banquet atmosphere and tedious program of set speeches. Business rivals among the New York importers and American manufacturers forgot their trade differences for the occasion. They chatted and laughed and told stories about their experiences as they might in the café of the Navarre or the Dutch room in the club in New York. After dinner coffee and cigars and things in multicolor labeled bottles kept the crowd together until after midnight. It was certainly an international occasion, for the host was a German company, giving a dinner to the Americans in

Lozier 30-35-Horsepower Touring Car.

It has been known for some time in trade circles that the Lozier Motor Company, of New York City, builders of gasoline launches, was preparing to build automobiles, its first automobile type motor having been exhibited at the 1904 Sportsman's Show at Madison Square Garden. The first Lozier cars have been undergoing a thorough road testing for some months, and the announcement is now made that a number of cars are being built for the coming season. The prominent position long held by the Lozier company in the launch and marine motor field causes much interest to attach to the result of its efforts in automobile designing.

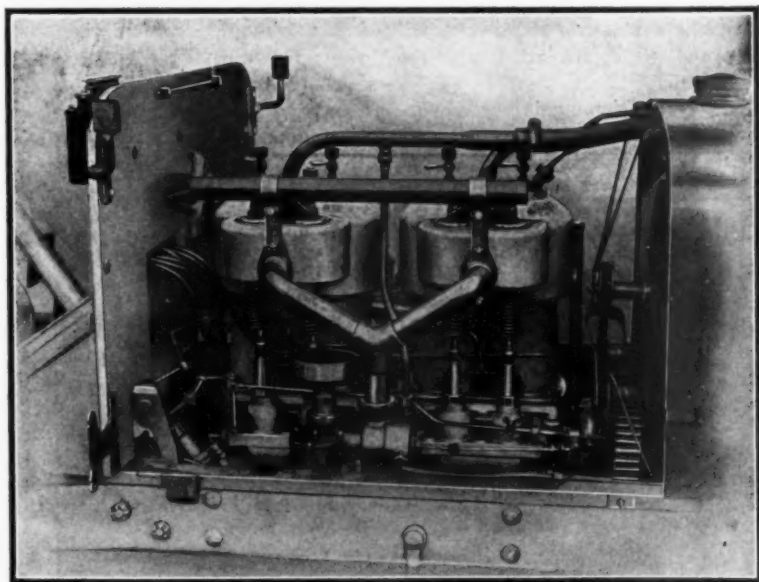
Only one size of automobile will be built for the present. This has a motor of four vertical cylinders, which occupies the conventional forward position under the hood and is rated at 30-35-horsepower. The cylinders are cast in pairs and bolted to an aluminum crankcase. All valves are mechanically operated, the inlet valves being on the right hand side and the exhaust valves being on the left of the cylinders. Each pair of valves is held down by a yoke with a single stud and nut. Valves, springs and valve lifters are all alike and are interchangeable. A nickel-steel composition having a low coefficient of expansion is used for the valves, with the object of reducing distortion to a minimum. Enclosed chambers are provided in the crankcase for the cams and valve lifters. These are in com-

carbon steel is used for the crankshaft. A novelty in the construction of this member is that the crank-pins are hardened and ground, a special machine being used for the grinding operation. Reciprocating and rotating parts are made as light as is con-

An aluminum pan, forming a connection between the motor and the transmission gearcase, encloses the flywheel. The intermediate shaft is provided with universal joints to avoid strain on the bearings through twisting of the frame. Spring-supported leather facing on the clutch ensures gradual engagement and enables the car to be started without shocks. Means



LOZIER 30-35-HORSEPOWER TOURING CAR, FITTED WITH BODY FOR TESTING.



INLET SIDE OF LOZIER FOUR-CYLINDER ENGINE.

munication with the main crank chamber, and are lubricated by the splash therefrom. Small covers give access to the cams. The cam shafts are driven direct from the crankshaft, there being no intermediate gears. There is a steel pinion on the crankshaft and on each cam shaft a built-up gear of fiber and bronze. Mild open-hearth 30-point

sistent with durability, and are balanced carefully to avoid objectionable vibration when running.

The single carbureter used is said to be absolutely automatic at all motor speeds.

Cooling of the cylinders is effected by a system comprising a honeycomb radiator, a gear-driven centrifugal pump and a fan. Jump-spark ignition is fitted, the ignition timing lever being located on top of the steering wheel, together with the throttle lever. Storage batteries or high tension magneto will be supplied at purchaser's option.

are provided for removing the clutch without disturbing the motor or gearcase when it is necessary to renew the leather facing. Three forward speeds and a reverse are given by the sliding gear transmission, one lever being used for all speed changes. This lever is locked and cannot be moved while the clutch is engaged. The drive on the high gear is direct, the countershaft in the gearcase being idle. Power is transmitted to a cross shaft carrying the differential, and thence by side chains to sprockets on the hubs of the rear wheels. The transmission shafts, which are of nickel steel, and the jack-shaft turn on ball bearings. The gears are of hardened steel with teeth of six pitch. Differential and emergency brakes are fitted, the former having a brass friction band, which may be renewed without difficulty, while the brakes on the rear hubs are of the expanding ring type, enclosed from dust and mud. The differential brake, which is operated by a pedal, is inter-connected with the clutch, so that the application of the brake throws out the clutch. The emergency brake, however, is independent of the clutch, and may be used together with the motor, connected through the slow-speed gears, when descending very steep hills, a method that is recommended by some drivers, who say that skidding is less liable to occur when the motor is used to assist in the braking.

The new Lozier car has a pressed steel frame and I-beam axles, the latter made from nickel-steel forgings. Semi-elliptic springs, 38 inches long and 1 3/4 inches wide, are used at the front of the car, and

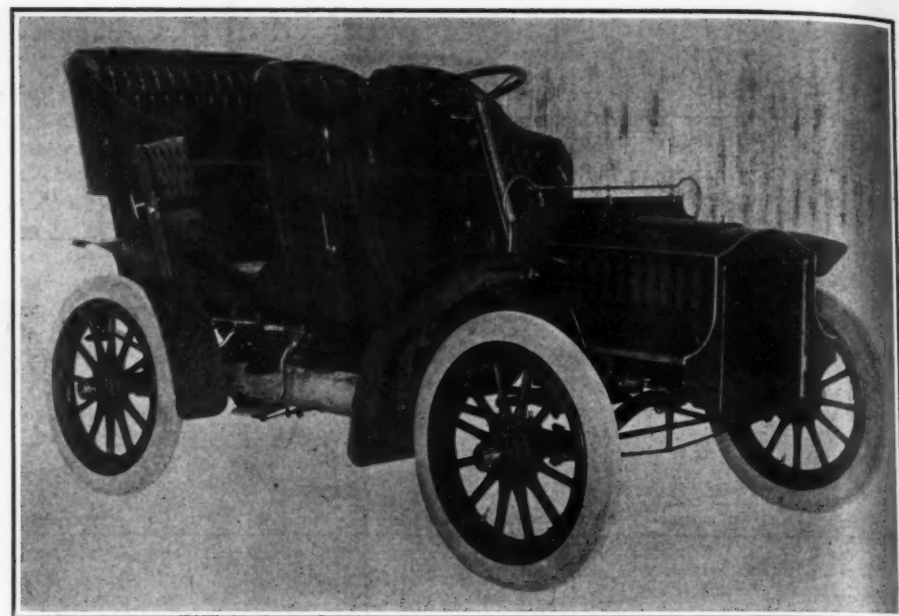
similar springs, 42 1-2 inches long and 2 inches wide, at the rear. The rear pair of springs is supplemented by a cross spring. The artillery wheels have ball bearings and are 36 inches in diameter fitted with 4 1-2-inch tires. The wheelbase is 115 1-2 inches, and there is ample clearance over the road surface. Aluminum is used for the body, which is to be built to suit the taste of the purchaser. The weight of the car complete is about 2,500 pounds.

Cadillac Light Models.

Although the Cadillac Automobile Company is building a four-cylinder touring car, particulars of which will shortly be announced, it is retaining and adding to its line of light single-cylinder machines, from which the accompanying photographs are taken.

The satisfactory results given by the Cadillac cars during the past year are attested by the fact that the company has found very few changes necessary. In the new models, the engine in particular remains substantially unchanged, but has been refined in detail, so that it is now rated at from 8 1-2 to 10 horsepower, which is certainly unusual power for a horizontal motor of five inches bore and stroke. The planetary change-speed gear has been changed only in the method of supporting the friction bands, which are now so mounted that no appreciable side pull is exerted on the bearings and crankshaft when these bands are tightened. A special feature of this planetary gear is that it has only one oil hole, into which enough oil can be introduced to last for several days.

A neat feature of the motor, which has been used for the past year, but which is less known than it deserves to be, is the method of oiling the piston. At the bottom of the piston a groove is cut in the first two



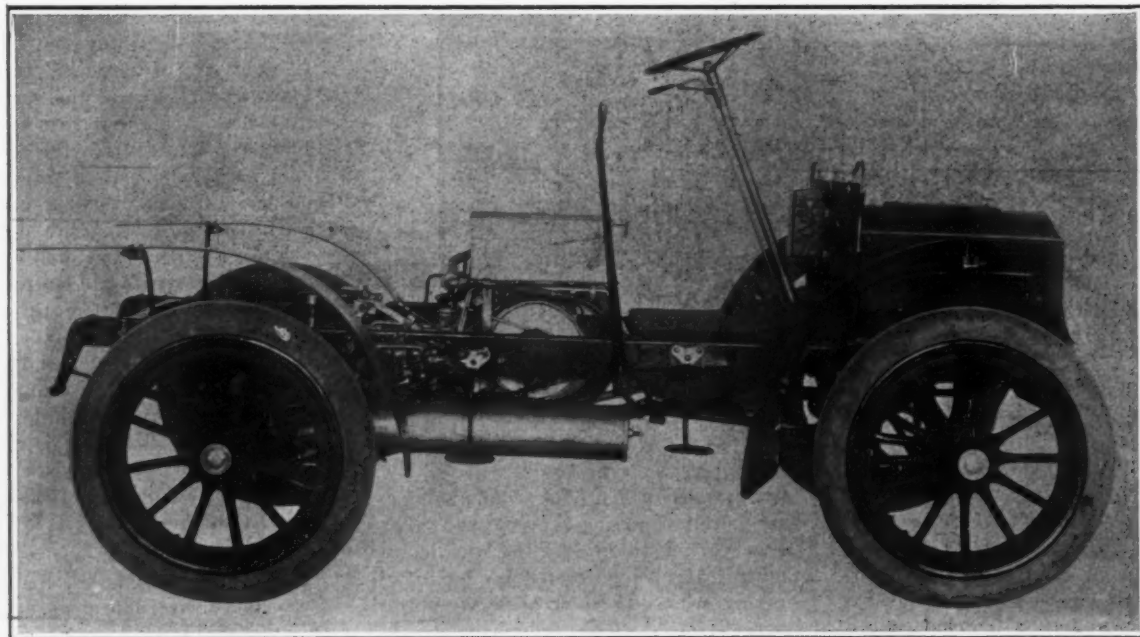
CADILLAC MODEL F 8 1/2-10-HORSEPOWER TOURING CAR WITH SIDE ENTRANCE BODY.

packing rings and the spacing collars or junk rings between them, and this groove terminates in a circular groove in the third junk ring, which extends around both sides to the top of the piston. At the top it meets two other grooves, which are cut in the third packing ring. The effect of these grooves, which form a continuous though minute path of leakage from the cylinder, is to cause any surplus oil collecting at the bottom of the piston to be forced out, following the grooves till it reaches the top of the piston, whence it works down while contributing to the lubrication of the latter. The more familiar copper water jacket and double-insulated spark plug are among the features retained.

The Model B machine, made into a touring car by the addition of a detachable tonneau, is essentially the same machine as

during the past year. The new Model E differs from it chiefly in having a new and much neater false bonnet. In the front of the bonnet is a radiator patterned after the new style, with zigzag tubes and closely set square fins. The Model B has the pressed steel front axle already familiar, but the Model E has an arched tubular axle, built up with a heavy arch, a central strut, and a truss rod below. The top of the arch is attached to the transverse front spring, which, instead of being bent downward at the ends, as in the Model B, is perfectly flat, so that the replacement of possible broken leaves when touring is a much simpler matter. This Model E is sold with a non-convertible runabout body, to which a buggy top may be added for doctor's use, if desired.

The Model F is substantially the same



CADILLAC MODEL F CHASSIS, FOR SIDE-ENTRANCE TOURING BODY OR DELIVERY WAGON TOP.

machine, but with side entrance and rear seat added. The wheelbase of Models B and F is the same, 76 inches, while that of Model E is 74 inches. Model E has 28-inch wheels, and the other machines have 30-inch wheels. The delivery wagon, also designated Model F, has likewise a 76-inch wheelbase, and its weight is given as 1,400 pounds. The Model F touring car weighs 1,350 pounds, against 1,450 pounds for the Model B, and 1,100 pounds for Model E with runabout body. The standard tread of all the machines is 56 1-2 inches, but a 61-inch tread is given as an option. On Models E and F, unless otherwise specified, the perfected Dunlop tires are supplied.

Acme Opera 'Bus.

The opera 'bus, illustrated herewith, was built by the Acme Motor Car Co., of Read-



ACME OPERA 'BUS WITH REAR DOOR AND HEATED INTERIOR.

companying illustration. The motor, located in the hood, has two vertical cylinders of 4 1-2 inches bore and stroke, with integral heads and water jackets. The inlet valves are automatic. Three forward speeds and a reverse are given by a transmission gear of the individual clutch type controlled by a single lever. Drive is by propeller shaft and bevel gears. Ignition is by jump spark, the coil being placed on the dashboard, where there is a double-throw switch for making different connections between the two sets of batteries that are supplied with the car.

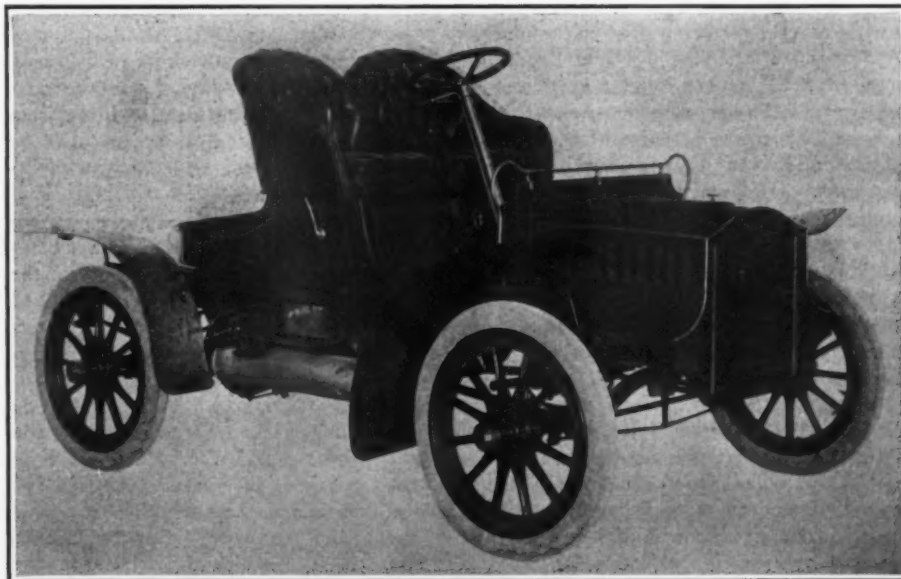
The body is of laminated wood, and is of the side-entrance type, the front seats being divided. By removing the floor boards between the front seat and the dashboard the transmission may be inspected, while the removal of the tonneau floor exposes the differential. The standard finish will be Cumberland blue with cream colored running gear. Albert L. Pope, vice-president of the Pope Mfg. Co., is shown at the wheel of the new car.

POPE-TRIBUNE SIDE-ENTRANCE TOURING CAR WITH VERTICAL TWIN-CYLINDER MOTOR.]

ing, Pa., for a citizen of Chicago, and was fitted up in the finest manner. Entrance is through a rear door; electric lights illuminate the interior, and the driver may be communicated with through a speaking tube. There is a folding writing desk, and receptacles are provided for opera glasses, toilet articles and engagement book or papers. Drab cloth is used in the upholstery. Another feature that will be appreciated in Chicago along about automobile show time there is that the interior is heated. The object was to produce a car that would be comfortable in bad weather, and everything possible was done to ensure the comfort of the passengers.

Pope-Tribune for 1905.

The Pope-Tribune car for 1905, built by the Pope Mfg. Co., in Hagerstown, Md., is of the popular light touring car type with French hood in front, as shown in the ac-



CADILLAC MODEL E, 8 1/2-10-HORSEPOWER RUNABOUT WITH "NON-CONVERTIBLE" BODY



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Copies Printed This Issue, - - 12,000
“ “ Since Jan. 1, - 639,000**Motor Touring
and Its
Influences.**

An incidental but by no means insignificant and unimportant exhibit at the Paris Show is that of a series of completely decorated and furnished bedrooms and bathrooms, similar in a way to the model room shown in the great American department stores. To the American mind, at least, the connection between the automobile and house-furnishing fails to suggest itself at the outset; but there is, nevertheless, a good practical reason for the seemingly incongruous exhibit. Those who have toured on the Continent in automobiles, or even traveled by less modern means over the conventional routes, stopping only at the large towns, will appreciate the deficiencies in point of both convenience and comfort as understood by Americans. To the average American, accustomed even in the medium walks of life to furnishings, household conveniences, and in particular toilet appliances, which are not merely acceptable but actually elegant, no amount of the quaint and picturesque in foreign travel can compensate for the primitive conditions of everyday life. The object of this new feature of an automobile exhibition is to demonstrate to French hotel and inn keepers the necessity for and the possibilities of a reform through the adoption of modern methods.

As a means to this end, the exhibit is very well arranged; the decorations and furnishings are simple, suitable and in excellent taste, showing how to obtain the

best results at moderate expense. The most important detail, of course, is that of the bathroom, and here much is to be learned from American goods and methods of installation.

If any doubt exists as to the need for reform in hotels, it is dispelled by the present exhibit of strictly touring cars—not merely cars in which motoring enthusiasts patiently endure the discomforts of the weather for the sake of certain compensations, but cars which, by their luxurious furnishings, tempt the non-motorist to abandon the most modern of the continental expresses. The American “Pullman” is but one of many of these new cars, exhibited this year in greater perfection and larger number than ever before, and now claiming the dignity of a distinct and well defined type.

Considering the popularity to which automobile touring has already attained in cars of the open tonneau type, there need be no doubt as to its future when such cars as these are to be had; and with this increase of touring comes the demand for better accommodation for travelers. The reform in this direction which is now promised is attributable solely to the influence of the new method of locomotion.

**Contests
for Touring
Trophies.**

The question of public competitions is a serious one for all automobile clubs; on the one hand, there is convincing evidence of the benefits of road races and similar contests, while on the other there are the speed laws and the various bodies, general and local, charged with their enforcement. Such road races as the Vanderbilt cup, the Gordon Bennett and those from Paris to the other European capitals are possible only under special conditions, and the endurance runs as held in this country have outgrown their usefulness and interest.

The Automobile Club of Great Britain and Ireland will introduce in 1905 a new form of contest, a combination of the race, the reliability run, the tour and the consumption contest. The course will be from 150 to 250 miles and the cars will be limited in many ways with the idea of restricting the entries to *bona fide* touring cars, with comfortable bodies, accommodating four persons. One of the most important conditions is the limiting of the fuel supply, but one gallon being allowed for every twenty-five miles of average dry road; or only enough for a speed of twenty-five miles an hour.

Though the prizes will be awarded on the basis of speed, it is evident that the ordinary features of a road race will be lacking; in the first place, the large and powerful racing machines will be specifically excluded by the conditions of entry; second, the car which is driven at top speed will in all probability run short of fuel before the end of the course.

It would seem that the conditions are such as to favor directly those engines which are most economical in consumption and those cars which have the most efficient transmission, while the skill and good judgment of the drivers will be severely tested.

This contest presents some features different from those for the Glidden touring trophy, which will be held in this country next summer, the latter being really a tour of ten days' duration. It is possible that a shorter contest on the lines of the English event might also prove popular here and attract entries from those whose time does not permit the longer course.

**Finality
in Automobile
Design.**

The everyday practicality of the automobile being fully established, as well as its capabilities for dangerous and useless speeds, the next steps in the line of advance are obviously the improvement of the roads to a point where they are usable by all vehicles at all seasons, and the production of reliable cars of moderate speed and at prices within the means of the average user of a horse-drawn carriage. With these two ends even partially attained the automobile will no longer be limited to certain classes in the community, but will take its place with such popular institutions as the horse and carriage and the typewriter in contributing to the advance of civilization.

The first step toward any material cheapening of production must be the acceptance of some one or two final standards of design, thus eliminating the necessity for costly experiments. Another serious drawback which has thus far existed is the uncertainty in the minds of users and intending buyers as to the advantages to be gained by waiting for the next new model. With such finality of design attained in the automobile as has long existed in the horse-drawn carriage, and with a similar standardization of parts, makers will be free to concentrate their attention upon the production of more efficient but less costly vehicles of every grade.

That finality of design is at least within sight is indicated alike by the exhibition of 1905 cars just closed in Paris and the descriptions of the cars now preparing for the New York show.

The vital elements of the automobile are already firmly established—the steering knuckles on the front axle, the differential in the rear axle or countershaft, the form and construction of the chassis, the wheels, tires, springs and brakes, the motor and its place at the front, the change-speed gears, the two transmission systems by chains or central shaft, and the forms of bodies for various uses.

There are, it is true, almost unlimited possibilities of improvement in such lines as electric propulsion, mixed gasoline and electric systems, electric speed change, four-wheel drive and steer and other devices as

yet in the experimental stage, any one of which may in a day almost revolutionize the automobile and necessitate radical and costly changes in models and methods and an entire readjustment of all conditions of making and marketing. In spite of this, however, the indications now are that for some time to come the makers will be free to deal with the two subjects of perfection of detail and economy of construction, while the change from one year to the next will be far less marked than in the past, with proportionately greater inducement to the intending buyer to purchase and use a thoroughly reliable car rather than to wait indefinitely for something better.



Car and Launch Racing in Cuba. The program of winter sports, which in two years has been greatly lengthened by the institution of automobile races in Florida, will be still further extended this season. The automobile races on the Florida sands will be supplemented by auto boat races on the adjoining waters, and following these events the cars and launches will be transferred to Cuba. A reliability run is already arranged for auto boats from Florida to Havana, the smaller launches being shipped by steamer, and other races and trials will take place subsequently in Havana Harbor.

From the glowing accounts of the adventurous pioneers who have invaded Cuba in the cause of the automobile a veritable paradise for road racing has been discovered—a smooth, even, hard-surfaced road of fifty miles, available by official permit for unlimited speeding. The material advantages, the novelty of the trip and the possibilities from a business standpoint, will probably attract a large attendance of the representatives of both the sport and the industry.

The discovery and prompt utilization of such new courses, free from many of the objections of the northern roads, is well worth the attention of the authorities of Long Island and other similar sections. If, as many maintain, a great race, such as that for the Vanderbilt trophy or the Gordon Bennett cup, is of financial value to a community, then some active measures will be needed in the line of road improvement and of hearty and voluntary coöperation with those in charge of the race to offset the attractions of the semi-tropical courses.

The competition of heavy oils arranged by *L'Auto* for this month in France, has been postponed until the latter part of March, it being considered that the winter weather was not suitable for such a test at this stage of heavy-oil development. This decision has aroused Mr. Gautreau, maker of the carbureter bearing his name, who has issued a personal challenge for a test this month from Paris to Rouen and return for a stake of 1,000 francs. The points of the competition are to be the total fuel consumption per ton kilometer; the proportion of the mixture of heavy oil and the time during which the motors fail to act.

CUBA TOURNAMENT TO FOLLOW FLORIDA.

One Hundred-Mile Road Race from Havana to San Cristobal and Back a Feature of Three-Day Carnival to Open February 9—Auto Boat Endurance Run and Races.

It is now practically certain that an automobile race meet will be held at Havana, Cuba, commencing February 9, and continuing three days. W. J. Morgan and S. A. Miles, of New York, who journeyed to Havana for the purpose of making preliminary arrangements for the carnival, had an interview with President Palma on December 15 and were well satisfied with the result. The President expressed himself as being personally strongly in favor of the movement, chiefly on account of the prominence into which Cuba would be brought through the publicity that would be given the races, and because the wealthy men who would visit the island would doubtless investigate its conditions and possibly become further interested in it. A conference between the President and some of the government officials was necessary before a definite reply could be given, but the automobilists were assured that there was little doubt of satisfactory arrangements being made.

Later the same day Messrs. Morgan and Miles met, at the office of Secretary Mendoza, of the Cuban Automobile Association, a number of prominent Havana men interested in the project, and submitted tentative programs for a three days' carnival, to include a road race from Havana to San Cristobal and return to Camp Columbia, a distance of about 100 miles; short races in Havana; illuminated and floral parades on the Prado, and auto boat races in the harbor. Complete and final arrangements will be made at once, as the government has arrived at a decision in the matter.

On the day previous to their interview with the President, Messrs. Miles and Morgan were driven in an automobile over the roads on which it is proposed to hold the long distance race, Manager Lopez, of the Havana Garage Company, acting as

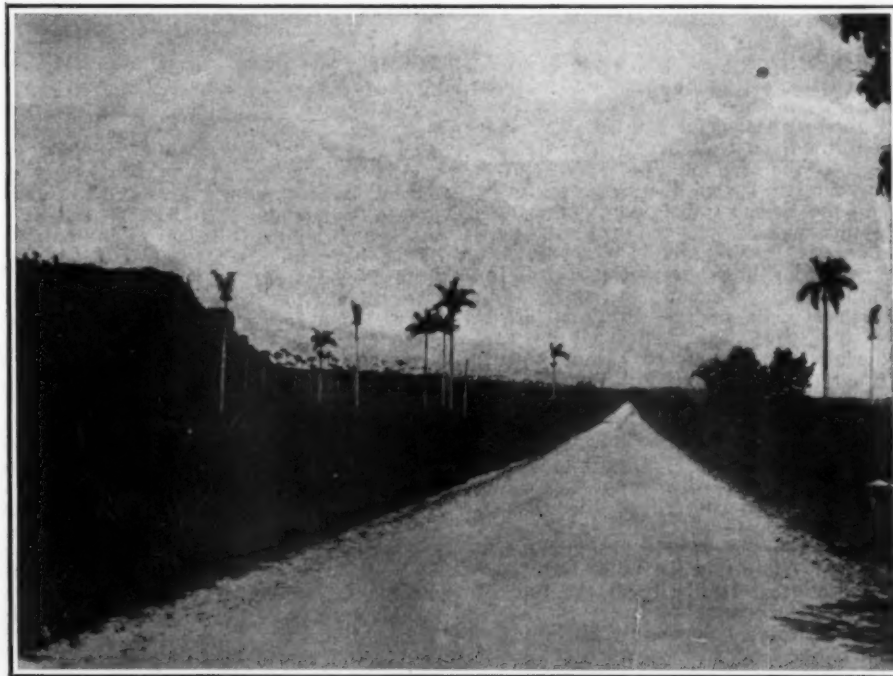
host. The visitors declared the roads to be among the finest they had ever seen, and that should the meet be carried out, enormous speeds should be made by the big cars.

The policing of the course will be particularly well attended to. Members of the Havana Rural Guard and of six bicycle clubs will be available for this purpose, and it is expected that it will be possible to have men stationed a hundred yards apart along the entire course. The distance, to be exact, is 160 kilometers, and is marked by kilometer posts. The road surface is of limestone, from twenty to thirty feet wide, and Mr. Morgan states that there are several straight smooth stretches from ten to fifteen miles long, where the highest speeds can be attained. San Cristobal will be a control and the usual long-distance race control rules will be in force there. Señor Diaz, Secretary of Public Works, who is himself an automobilist, states that the road, which is government property, will be placed in perfect condition before February 9, the day set for the race. United States Ambassador H. G. Squires, also an enthusiastic automobilist, is doing all in his power to aid in making the affair a success.

About fifty automobiles are owned in Havana, all large cars of European manufacture, and the owners are much pleased at the prospect of a modern automobile tournament on their own roads.

Mr. Morgan returned to New York this week, bringing the news that all the plans are working out satisfactorily, and that the Cuban government has granted the necessary permit to hold the races at Havana. He states that entries are already coming in, among those already received being a F.I.A.T. and Pipe entry.

Automobilists who desire to take their cars to Cuba for use temporarily will be permitted to do so free of duty, provided a bond is posted amounting to at least double the amount of the duties that would be payable under other circumstances; and further, provided that the automobiles are for personal use only and not intended for sale, hire or other commercial purpose. The time during which cars may remain in Cuba under these conditions will be fixed at the discretion of the Collector of Customs.



SECTION OF FIFTY-MILE ROAD IN CUBA ON WHICH 100-MILE RACE WILL BE HELD.

toms, but will not exceed six months. The importer is required to make a declaration of his purpose in bringing the car into the country, which being done to the satisfaction of the Collector, the machine will be admitted as "an article for personal use."

Arrangements will be made with the P. & O. steamship company to transport the automobilists from Miami to Havana. An endurance contest for auto boats will be held, the course being from Palm Beach, Florida, to Havana, and those boats which do not take part in this event will be carried across on the P. & O. steamer.

After their conference with the President, Messrs. Morgan and Miles left for Daytona, where they conferred with the Florida East Coast Automobile Association concerning arrangements for the tournament.

One of the reasons given by President Palma for his interest in the proposed tournament at Havana was that he was much interested in the good roads movement, and that, recognizing the influence of the automobile on road improvement, he favored any legitimate plan that would bring automobiles to Cuba.

HALF CENTURY OF RECORDS.

Oldfield Annexes All Records to Fifty Miles in California.

Special Correspondence.

LOS ANGELES, Dec. 24.—Barney Oldfield and his Peerless *Grene Dragon* now hold all track records from one to fifty miles, inclusive, not excepting the nine-mile figure of 8 minutes 17 seconds heretofore held by Charles Basle, who made it with a 90-horsepower Mercedes car. This was the only record not in the possession of Oldfield after the fifty-mile trial at Fresno on December 13, and he chopped a flat 13 seconds from this at Agricultural Park in this city, last Thursday, doing the distance in 8 minutes 4 seconds, and making the list of records in the heavy-car class an exclusively Oldfield-Peerless affair. Incidentally he lowered his own records from two to nine miles, the times being as follows: Two miles, 1:46 2-5; 3 miles, 2:39 4-5; 4 miles, 3:35; 5 miles, 4:29; 6 miles, 5:22 2-5; 7 miles, 6:15 4-5; 8 miles, 7:09 1-5; 9 miles, 8:04.

The record for fifty miles was captured by Oldfield at Fresno last week, the new figure being 48 minutes 39 1-5 seconds, better by 7 minutes 2 4-5 seconds than the best previous record for that distance, made by Charles Gorndt at Cleveland in October last with the Winton *Bullet No. 3*. A light rain fell during the morning of the day of the Fresno trials, and put the track in grand condition, laying the dust. Oldfield covered the first mile in 56 2-5 seconds, the next four in 55 2-5 seconds, and the sixth in 55 1-5 seconds, the sixth being the fastest mile of the fifty. At fifteen miles the time was announced as 14:3 3-5, a new world's record. From sixteen to twenty miles he failed to better his Denver figures, but from the twenty-first mile to the end of the trial he set new marks. Twenty-five miles was made in 23:39 3-5. After this point the *Green Dragon* was allowed to slow up slightly, the succeeding five miles being covered at the rate of about 60 seconds each. Thirty miles were made in 28:38 4-5—nearly five minutes to the good. After this the miles were covered with great regularity at the rate of about a mile a minute until the forty-ninth, when the motor, apparently feeling the strain of the long pull, began to act somewhat queerly, and that mile took 65 seconds. The last mile was made in 63 seconds.

RULES FOR ENGLISH TOURING CAR CONTEST.

Strict Touring Conditions to Govern Race on Isle of Man Over Course of 150 to 250 Miles for Tourist Trophy—Classification for Auto Boat Reliability Trials.

Special Correspondence.

LONDON, Dec. 16.—The Automobile Club of Great Britain and Ireland has been extremely busy of late, arranging next season's contests, and from all tokens 1905 will see England well to the front in motoring events, which absolutely chase one another and comprise contests of every kind.

Of much interest to the world at large is the new cup which the A. C. G. B. I. is presenting for a touring car competition next season, as the outcome of many meetings to consider the question of testing these vehicles under reasonable conditions with a view to absolute efficiency. The prize has been named the Tourist Trophy, and will be competed for annually, the first race taking place next September, probably over the Gordon Bennett elimination course on the Isle of Man. As the event is international, the following conditions may be of interest to American automobilists:

The distance of the race, including controls, shall not be less than 150 and not more than 250 miles. The fuel to be used shall be provided by the club and be petroleum spirit having a specific gravity of 0.695 to 0.705 at 60 degrees Fahrenheit. The allowance of petroleum spirit shall be determined by the club according to the nature of the course selected and the conditions of road surface on the day of the race. The car completing the course in the shortest time shall be the winner, subject to compliance with these regulations, and the entrant of the car shall become the holder of the trophy. The weight of the chassis shall not be less than 1,300 pounds nor more than 1,600 pounds; batteries and other ignition apparatus, tires on the wheels, bonnet, tanks (empty), dashboard, steps, lamp brackets and front mudguards shall be treated as part of the chassis. No ignition battery, magneto or other source of electric energy shall be carried except those fixed to the chassis at the time of weighing. The load carried by the chassis, exclusive of fuel, oil and water, spare tires, spare parts, luggage and provisions, shall not be less than 950 pounds, including the body with rear mudguards and their stays, floor boards and lamps, driver with one passenger, averaging not less than eleven stone (154 pounds) each, and not less than 300 pounds of loose ballast in the portion of the body in which the two unoccupied seats are situated. The body shall be of the ordinary touring type, properly upholstered, comfortably seated for driver and three passengers facing forwards, two in front, side by side, and two behind, side by side. Efficient mudguards to rear wheels shall be fitted to the body.

Between the start and finish of the race the driver and his passenger shall alone be permitted in any way to assist a car, and no stores, supplies, spare parts or spare tires other than those actually on the car at the start shall be taken on during the race. Everything, except fuel, which is on the car at the start must be carried throughout the race. No more than two cars by one manufacturer will be accepted; the minimum entrance fee shall be £20 (\$100) per car. Every car shall be provided with fuel tanks capable of holding no less than twelve gallons, and no other fuel shall be carried except that provided by the club.

Entries will be received at the A. C. G. B. I. at 119 Piccadilly, London, W., and forms and full regulations will be forwarded from the same address.

POWER BOAT RELIABILITY TRIALS.

The provisional rules for the next reliability trials for power boats are now out. They are quite similar to the ones issued during the waning season, when the trials were held on Southampton waters immediately preceding the British International Cup race for motor boats.

The trials will be held over a period of ten hours daily for two days, and an innovation has been made in the classification, which now includes six classes: A, yachts' dinghies (clench built), not exceeding 15 feet over all; B, yachts' launches (clench or carvel), not exceeding 20 feet over all; C, yachts' launches (c. or c.), not exceeding 25 feet over all; D, yachts' launches (c. or c.), not exceeding 30 feet over all; E, unrestricted vessels of any description propelled by internal combustion engines and not exceeding 25 feet over all; F, unrestricted vessels of any description propelled by internal combustion engines and exceeding 25 feet over all. The two unrestricted classes are a new addition.

AUTO SCHOOL EXTENSION.

Day and Night Courses to Be Held the Year Around in Boston.

Special Correspondence.

BOSTON, Dec. 26.—Extensive and important changes will be made in the Boston Y. M. C. A. with the beginning of the new year. This school, which was the first of its kind in the country, met with great success last year. It reopened this fall upon practically the same lines as last year, but before the first term was ended it was found that radical changes would be necessary to meet the demands of the pupils.

The most important of the changes that have been decided upon by the advisory board is that the school shall be in operation the year around, instead of merely during the winter months. Private instruction will be given, and there will be special facilities for women students. A competent instructor will be in charge and will instruct upon any type of vehicle. Another notable change is the establishment of a day school. Hitherto instruction has been given only in the evenings, but it was found that there was a large number of business men who did not care to devote their evenings to the school but who would attend classes if they were held on afternoons. The day school will open January 2 at 4:30 p. m. There will be lectures on steam vehicles from 4:30 to 6 o'clock on Mondays and Thursdays, and on gasoline vehicles Tuesday and Friday afternoons between the same hours. The instruction will include shop and road work and arrangements have been made for instruction upon any particular type of car.

The second term of the regular school opens to-morrow evening with the gasoline lecture in charge of Albert L. Clough. The school, with the changes that have been made, will be more comprehensive than ever before, to meet the needs of all classes of motorists. The chauffeurs' department is also a success, students of the school finding ready employment and owners being supplied with competent drivers.

TOLEDO Y. M. C. A. SCHOOL.

Special Correspondence.

TOLEDO, Ohio, Dec. 26.—The local Y. M. C. A. is to open an automobile school which

is to be ready for the enrollment of students by September 1, 1905. The decision to open the school was reached as a result of the receipt of almost daily requests for a school either by officials of the association or some of the local automobile dealers.

The board has not yet determined how extensive a course it will offer, but it will be divided into three courses. The first will take up the construction of the automobile, the second the automobile as a scientific product, and the third the operation of an automobile. The courses are to be illustrated with photographs and drawings and parts of machines will be exhibited. All the leading makes of cars will be taken up and the distinguishing features explained to the pupils. Manufacturers will be asked to furnish such material as they can that will be of assistance to the instructor and the pupils. Local automobile dealers will lend all possible assistance.

A FAREWELL LUNCHEON.

Paul Deming the Guest of Honor at Luncheon Given by White Company.

A farewell luncheon was given to Paul H. Deming, the retiring manager of the New York branch of the White Sewing

Machine Company on the occasion. Others who made speeches were Winthrop E. Scarritt, ex-president of the A. C. A., and Mr. Arozarena, of the City of Mexico. Upwards of sixty well-known automobile owners and members of the trade were guests of the White company on the occasion.

SYRACUSE CLUB BANQUET.

Invitations Out for Third Annual Affair to Be Held January 3.

Special Correspondence.

SYRACUSE, Dec. 26.—Invitations are out for the third annual banquet of the Automobile Club of Syracuse, which will be one of the principal local social functions of the winter. At a meeting of the club last Thursday night, the members voted to hold the banquet Tuesday evening, January 3, at the Yates Hotel. It is the opinion of the club that the annual banquets assist greatly in maintaining the prominence of the organization and in winning new members.

A banquet committee, of which Hurlburt W. Smith is chairman, and C. Arthur Benjamin, Carl L. Amos, Secretary-Treasurer Elliott and President Willet L. Brown are

erty situated on the Lakeview Boulevard two miles and a half from the city.

While such a proposition has been brought forward, the automobilists say that it was advanced by the yachtsmen, who wish to increase the interest in and attendance at the yacht club. The members of the automobile club appreciate the fact that there would be many advantages to be gained by acquiring the privileges of a handsome clubhouse, but they do not wish to saddle themselves with the expense which the move would entail, it being known that there are one or two heavy mortgages on the yacht clubhouse.

The automobilists have received offers of suitably equipped club rooms from a couple of local garage companies, but these they have refused to accept, having noted the trouble which the acceptance of similar offers has brought to certain clubs, and will remain without a clubhouse until they can build one of their own.

President Brown has been selected to attend the annual meeting of the American Automobile Association in New York, January 16, as the club's representative. Hurlburt W. Smith was elected alternate.

The annual election of the local club will be held January 9 and a nominating committee is already preparing the list of officers to be voted upon at that time.

Sigmond Krause has been elected to membership in the club and a number of others are on the waiting list. The prospects are for an excellent season in 1905.

CHICAGO A. C.'S UNIQUE LUNCHESES.

Special Correspondence.

CHICAGO, Dec. 26.—The Chicago Automobile Club is achieving more than local notoriety through a series of novel dinners and luncheons that are being served Thursday noons at the Michigan Avenue home of the organization. John Farson, the president of the club, famous for his injunctions against the city's automobile ordinances and for his crimson ties, is the originator of the idea.

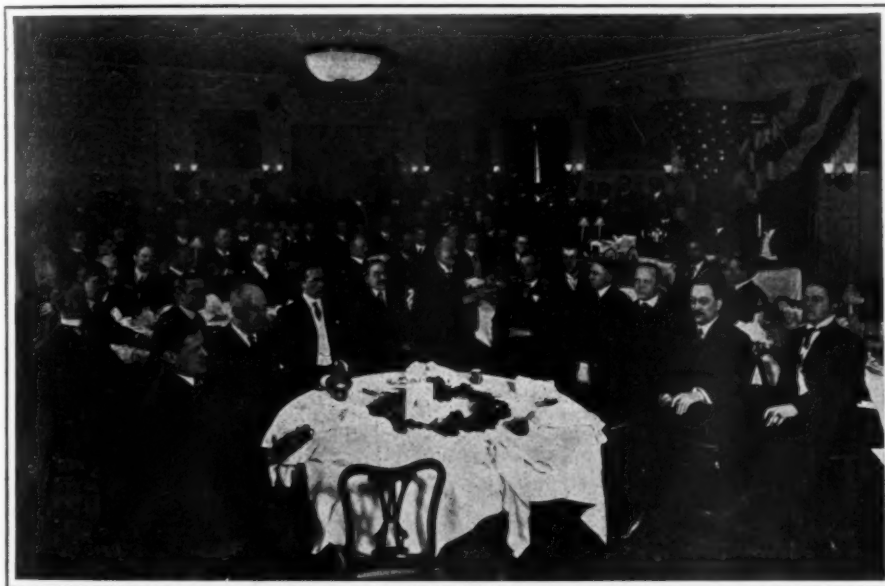
"A fifty cent luncheon," announces the weekly bulletin. "Gasoline soup, au natural, wind tire pudding and scrambled sprockets."

Next Thursday a New Year's dinner will be given. These club functions have made the clubhouse a popular meeting place for the members. While they are waiting for the New York and Chicago shows and for the Ormond-Daytona races, the entertainment committee has arranged a number of evening theatricals. President Farson has also figured in these. His name, slightly transposed—"Farse Johnson"—was the title of a "burnt cork" show that will be repeated in Steinway Hall January 25.

KANSAS CITY CLUB AFTER MEMBERS.

Special Correspondence.

KANSAS CITY, Dec. 26.—Although there are 300 motorists in the city, only a third of them belong to the Automobile Club of Kansas City. At a recent meeting it was decided to remit the initiation fee to new members temporarily. A radical departure was the employment of a solicitor to see all motorists in the city and urge them to join the club. This is especially desirable, since a suit to test the legality of the city ordinance regulating the use of automobiles is now pending in the local courts and the motorists wish to present a united front in the fight. The club has made no decision regarding a clubhouse, but will attempt to secure one in the spring on one of the boulevards, preferably near one of the parks.



FLASHLIGHT PHOTOGRAPH OF AUTOMOBILISTS AT FAREWELL LUNCHEON TO PAUL DEMING.

Machine Company's automobile department, at the Hotel Astor, New York, on Thursday, December 22. Mr. Deming has been identified with the White branch since its first establishment in New York—in fact, he drove the first White car from Philadelphia to New York in May, 1901, and the following year the White garage was opened on Nineteenth street. Each succeeding year the business has expanded under Mr. Deming's management, and this year the fine premises on Sixty-second street were remodeled for the sale and care of White cars.

Mr. Deming, who relinquishes his position on January 1, to take up his residence in the West, was presented at the dinner with a handsome silver loving-cup, which was first filled with wine and sent the rounds of the tables. When the "psychological moment" came Windsor T. White, who with Mr. Deming on his right and Carl Page on his left, occupied a position of honor at an elevated table, introduced Mr. Page, who in turn made the presenta-

tion to Mr. Deming. Others who made speeches were Winthrop E. Scarritt, ex-president of the A. C. A., and Mr. Arozarena, of the City of Mexico. Upwards of sixty well-known automobile owners and members of the trade were guests of the White company on the occasion.

members, was appointed. Henry Walters, a prominent local attorney, has been asked to act as toastmaster. Among the invited guests are Mayor Alan C. Fobes, Commissioner of Public Safety Ralph S. Bowen, Corporation Counsel Walter W. Magee, Police Justice Frederick W. Thompson, Congressman Michael E. Driscoll, State Senator Horace White, Assemblyman Fred W. Hammond, Frank X. Wood, Edward Schoeneck, and Martin L. Cadin, Chairman Robert Gilman and the Highway Committee of the Onondaga County Board of Supervisors, President William H. Hotchkiss of the New York State Automobile Association, Harlan W. Whipple, president of the American Automobile Association and Frank D. Lyons, of Binghamton. Automobile club members of the nearby cities will be present also.

Officers of the club deny the report which has been extensively circulated that the organization would coalesce with the Syracuse Yacht Club and become a half owner in the magnificent yacht club prop-

MANY CHANGES IN CLEVELAND CONCERNS.

Baker Company Acquires Large Agency and Garage Business—Ohio Oldsmobile Company Leases Another Store—Peerless Moving into New Plant, and Reo Agency to Open.

Special Correspondence.

CLEVELAND, Dec. 26.—Several changes will be made by Cleveland retail concerns for next season. The Baker Motor Vehicle Company has acquired the establishment and business of the Automobile Garage & Repair Company on Huron street, but will carry on the business under the old name for the time being at least, with the agency for the Packard and Autocar lines. The second floor of the large Huron street establishment will be fitted up for the sale of Baker electrics. This branch of the business will be managed by the Price Brothers Carriage Company, which has had the Baker agency for several years, and whose contract still holds. The sale of the gasoline cars will be in charge of a representative of the Baker company and a repair shop will be fitted up where electrical work will be taken care of, as well as repairs to gasoline and steam vehicles.

R. H. McGoon, agent for the Pope-Toledo line, has leased a store at 390 Erie street, where he will continue to handle the same line.

CLEVELAND MOTOR CAR CO. OPENS STORE.

The Cleveland Motor Car Company, a new concern headed by W. L. Colt, formerly with the Federal Mfg. Co., has opened a store at 308 Erie street, where he will handle the Cleveland, a new car built to Mr. Colt's order by the Federal company. These two concerns, together with T. C. Whitcomb, who handles the Rambler and Ford, and the Ohio Motor Car Company, which handles the Columbia and Cadillac lines, gives the vicinity at the corner of Erie and Prospect streets four large automobile stores.

B. T. & N. A. Quilling, who for several years handled the Geneva steam vehicle at 254 Euclid avenue, have withdrawn from the field and have leased their store to the Ohio Oldsmobile Company, which will handle the Olds and Franklin lines. Ralph Owen, who is at the head of the concern, will also retain the establishment at 411 Euclid avenue, using it as a storage and repair shop. The Ohio Oldsmobile Company did a good piece of advertising this year by furnishing Uncle Sam with several delivery wagons and operators for collecting mail and packages from mail boxes and branch post offices during the Christmas season.

Otto Owen, who has been with his brother, Ralph Owen, for several years, will open a downtown store, handling the Reo, for which R. M. Owen, of New York, another brother, is general sales agent.

The F. B. Stearns Company will have no agencies this year, and with the exception of an old established agent in Boston, will handle all its cars direct. Mr. Stearns is increasing his facilities and expects to build an even 100 cars this season, all of them high-priced machines.

PEERLESS MOVING TO NEW FACTORY.

The Peerless Motor Car Company has done some remarkable construction work on its new plant, and expects to commence moving into the first of its buildings this week. Other buildings will be erected as soon as possible, and in the meantime work will continue in the old factory. The company built nearly 300 cars in 1904 and ex-

pects to increase this output considerably the coming year.

The Meriam-Abbott Company, manufacturer of gas engine charging outfits, has consolidated with the Bruce Company, manufacturer of gas engines under the name of the Bruce-Meriam-Abbott Co. The factory will be located on Columbus street, the headquarters of the old Bruce company. The lines will be continued and the business expanded. The Meriam-Abbott charging outfit makes it possible to generate current for charging electric vehicles at any time and without the necessity of having city wires run into a barn or garage.

The Perry-Payne Company has commenced work on a large building 125 by 500 feet, at the corner of Murison and Erie streets. The building is designed as an automobile garage, but it is not known what concern will occupy it.

TO BUILD THE IROQUOIS.

Newly Incorporated Company to Begin Making Touring Cars January 1.

Special Correspondence.

SYRACUSE, Dec. 27.—Papers were filed with the Secretary of State at Albany and the clerk of Onondaga County to-day incorporating the Iroquois Motor Car Company, with a capitalization of \$450,000. Charles A. Fox, of the firm of Fox & Rich, of this city, promoted and organized the company, the incorporators of which are: Thomas W. Pelham and Frank H. Clement, of Buffalo; Charles T. Blanchard and L. Frank Ormsbee, of this city, and Leonard F. Mahan, of Fayetteville.

The company will establish a factory and commence the manufacture of cars January 1. There will be a meeting of the incorporators within a few days to decide upon a site. Several offers have been received, and the company has an option on two factories.

The company will manufacture the gasoline touring car formerly built by the J. S. Leggett Company, of this city. Mr. Leggett, it is understood, will be connected with the Iroquois company.

RACING GOBRON-BRILLIE COMING.

Announcement is made by the management of the Importers' Automobile Salon, to be held in Herald Square Hall, New York, January 11-24, that all floor space has been taken by exhibitors, the last applicants being the manufacturers of the Gobron-Brillie and of the Léon Bollee cars. The former will be shown for the first time in this country, and it is anticipated that the exhibit will include one of the famous racing cars of that make. Liberal allotments of space have been made to exhibitors, each of whom will show from three to ten cars. The total number of exhibitors is now forty-one, and the list includes manufacturers of bodies, parts and accessories, tires, clothing, etc., as well as complete cars.

CLEVELAND SHOW ALLOTMENTS.

Special Correspondence.

CLEVELAND, Dec. 26.—Allotments for the Cleveland automobile show will be made tomorrow. Secretary George Collister, of the Cleveland Automobile Club, who is in charge of affairs, has received applications for all the space that can be provided. There will be fifty-eight spaces. Many more than that could be filled if the hall were larger, which emphasizes Cleveland's need for a large exhibition hall; also it brings out the importance of Cleveland as a center of the industry.

NEW ROCHESTER ENTERPRISE

United States Automobile Co. to Erect Large Garage at Once.

Special Correspondence.

ROCHESTER, Dec. 26.—The United States Automobile Company of Rochester has been incorporated with \$200,000 capital stock, to buy, build and sell automobiles, boats, engines and parts and supplies, and to conduct a garage, livery and repair business.

The company has acquired the lease of a store at the corner of Main street East and Elm street, and will use the entire store as a sales and show room. The temporary offices of the company are on the second floor of this store. In addition, the company is planning to erect three garages in the city which are to be among the finest and most perfectly equipped in the country. It is proposed to build a central garage at once. This building will be two stories high and cover an acre of ground. It is planned to have the general offices of the company in the second story and to fit up a clubroom which will be offered to the Automobile Club of Rochester for the use of its members. James A. Barhite, former master mechanic of the Buffalo, Rochester & Pittsburg railroad, is to be in charge of the main repair rooms and have supervision over all the branch shops.

The following officers have been elected: President, Harry S. Woodworth; treasurer, Henry H. Love; secretary, Austin F. Crittenden; directors, Henry S. Woodworth, J. Foster Warner, Charles F. Garfield, John A. Barhite, Austin F. Crittenden and Henry G. Day. All are of Rochester, with the exception of Mr. Day, whose home is at Providence, R. I.

GOOD OUTLOOK IN NASHVILLE.

Special Correspondence.

NASHVILLE, Dec. 26.—The numbering ordinance has gone into effect without friction between motorists and authorities and seventy-nine cars are now registered. A few more are still to be reported, as Nashville has a total of about eighty-five cars of various makes.

Few cars have been placed in storage for the winter, as the naturally mild climate has been even more pleasant than usual during the fall and early winter. Nearly all the cars are in active use on the streets and the country roads.

Dealers expect a heavy trade next year and several of them will add new makes to their now limited lines. John W. Chester, who handles the Oldsmobile, will add the Winton next season. The Southern Automobile Company, which has sold a dozen White steamers this season, will add the Autocar to supply the demand for a gasoline car. The new model White has been received by the agents and several orders for spring delivery have been booked.

A new and up-to-date garage will be opened next month by the Southern Automobile Company and will have storage capacity for forty cars. It is intended to make it the most complete storage and repair establishment in Nashville.

The run of 4,000 miles over English roads, made by Captain Deasy in a 16-horsepower Martini car, terminated December 7. Starting November 14, and continuing on every week day, this run was the first private trial under official recognition and official checking, the observers being provided by the A. C. G. B. & I. Most of the driving was done by Captain Deasy personally, though two assistants relieved him at times.



Announcement is made by the American Daimler Co., whose shops are at Astoria, Long Island, that American Mercedes cars of 40-45-horsepower, exact duplicates of the German Mercedes machines, will be ready for delivery by the end of January. These cars, manufactured under rights from the patent firm, will be built of material made to the specifications used in the German cars, and in some cases the parts themselves will be imported—axles, steering gears and ball bearings, for instance. Owing to delays in securing necessary material, it is probable that the chassis which will be exhibited at the Madison Square Garden automobile show, in New York city, will be incomplete. Some finished parts will also be exhibited. It is intimated that the price, which has not yet been announced, will be a point much in favor of the car. A complete working reorganization has been effected at the Astoria plant.

R. M. Owen, sales manager for the Reo Motor Car Co., of Lansing, Mich., has returned to New York after a trip of more than two weeks through the West, and reports the establishment of a number of agencies for the Reo cars. The Reo Automobile Co. has been formed at Chicago with C. H. Foster, of the Oakley National Bank, as president. The Reo Automobile Co. will handle the Reo car at St. Louis, and the Reo Automobile Co. of Ohio, recently formed at Cleveland, will look after the business in that section. Meadows & Hafer, of Buffalo, have been given the agency in that city. Work at the factory at Lansing is reported to be more than a week ahead of schedule, and prompt deliveries are assured. The cars of this company will be exhibited at the New York and Chicago shows, as well as at Boston, Buffalo, Cleveland and Philadelphia.

The report of the first annual convention of the Monroe County, N. Y., Good Roads Association, held in the Rochester courthouse October 10 and 11, has been issued in pamphlet form. The report is of interest to automobilists not only because every move in the direction of road improvement interests them, but also because the automobile played an important part in the proceedings. At the close of the convention members of the Rochester Automobile Club took the members of the meeting for a tour over some of the improved highways in the neighborhood of Rochester, covering a distance of about fifty miles, twenty-six automobiles being used. The convention delegates were the guests of the Automobile Club at Maplewood.

The youngest Kansas chauffeur lives in Powhattan. His father taught him to run his automobile, and one bright morning, when father was away from home and the other members of the family were not looking, he went to the barn, got the car out and was just starting for a spin down the street when his mother interfered. As she could not run the car, the child accommodatingly took it back to the barn. The story does not say what happened then.

The Adams Company, of Dubuque, Iowa, makers of the Adams-Farwell revolving-cylinder automobile, will, in addition to exhibiting in the Chicago automobile show, have an exhibit in a store on the opposite side of the street from the Coliseum. Here the motor can be shown in operation, which

cannot be done in the Coliseum on account of the rule prohibiting the use of gasoline in the building. It is expected that the peculiar construction of the machine will attract a large number of interested persons, and every effort is being made to provide a complete exhibit.

The government is advised that a new law has come into operation in Argentine Republic, whereby the duty on finished motor cars and motor vehicles of all kinds, together with spare parts and fittings, imported into that country, has been fixed at the rate of 10 per cent ad valorem. Under the old law motor cars paid duty at the rate of 50 per cent ad valorem. To the new duty has to be added the duty of 2 per cent, which is leviable on articles subject to a tariff duty of 10 per cent ad valorem or more.

The management of the Madison Square Garden automobile show is calling attention to the fact, already referred to editorially in THE AUTOMOBILE, that only members of the American Automobile Association and the American Motor League are entitled to reduced railroad rates during show time. Members or intending members may obtain information on the subject by addressing C. H. Gillette, secretary of the A. A. A., 39 West 42d street, or Isaac B. Potter, president of the A. M. L., Vanderbilt Building, New York City.

A paper chase has been planned for New Year's in Kansas City and a dozen entries have already been received. The hares probably will be H. L. Loose with a Pope-Toledo; Henry C. Merrill, with a White, and J. F. D. Moriarty, with a Stevens-Duryea. The hounds will probably have several Pope-Toledos, a White, Packard, Locomobile, Winton and several smaller cars. The chase is to be for about forty miles on macadam roads south of Kansas City.

S. K. Dingle and G. M. Wetherbee have purchased the interests of Messrs. Phelps & Taylor in the Boston Automobile Exchange, 177 Berkeley street, Boston. Mr. Dingle, who has been manager of the concern for the past four years, will continue in that capacity, while Mr. Wetherbee will be in charge of the sales department. The company has secured the exclusive agency for Boston and vicinity for the Phelps gasoline cars, manufactured by the Phelps Motor Vehicle Co., of Stoneham, Mass.

The Jackson Automobile Co., of Jackson, Mich., announces having placed agencies for its cars as follows: Chicago and southern Illinois, Hagmann & Hammerly, Chicago; Cincinnati, O., Charles Hauptner; Terre Haute, Ind., Hilderbrand Buggy Co.; Akron O., Charles E. Howland; Buffalo, N. Y., Jackson Automobile Co.; Boston, Mass., E. P. Blake & Co.; Trenton, N. J., W. P. Conrad; Buenos Ayres, South America, A. P. Guiland.

The Commercial Automobile Co., of 1336 Michigan avenue, Chicago, selling agent for the Synnestvedt electric automobiles, has received a report to the effect that a Synnestvedt electric omnibus was successfully run in Atlantic City, N. J., during a recent heavy snowstorm which tied up most of the traffic, and that it was the only motor vehicle to remain in service. Snow and slush covered the ground to a depth of eight inches.

While there was considerable business on account of the holidays in "automobile row" in Chicago the dealers said that there was every promise of the heaviest business in the history of the automobile during the coming spring. Every large manufacturer is represented in the number who are on the lookout for larger display and store rooms. There have been a number of realty transfers during the last week in the vicinity of the "row."

H. E. Shiland for the past three years head salesman for Birney A. Robinson's garage in Worcester, Mass., has severed his connection with that concern and it is announced has formed a copartnership with Jesse O. Norcross. The new firm expects to open a store immediately, with a line of machines including the Autocar, which has been handled this past season by Mr. Robinson.

A Chicago man who drove a Locomobile car during the past season has discovered that since taking up automobilism he has been entirely free from asthma and other throat and lung troubles with which he was formerly afflicted, and his daughter, who was similarly troubled, has experienced the same relief. "This is a new one on us," writes the Locomobile company, "but it sounds good."

The Cook & Stoddard Co., which recently opened a garage at 1028 Connecticut avenue, N. W., Washington, D. C., has leased the adjoining building and will cut an archway through from the present quarters. The new part will be used for the electric department. The company's line for 1905 will consist of the Winton, White, Orient, Baker, Cadillac and Stevens-Duryea.

A novel idea has been put into practice by the Lichtie Automobile Co., 822 Jefferson avenue, Toledo, O. This concern has inaugurated a physician's emergency call service, providing small enclosed touring cars in which doctors will be hurried to their patients at any hour of the day or night by drivers employed by the company. The business is reported to be increasing.

A three-story addition to the offices of the Diamond Rubber Co. at its factory in Akron, Ohio, will be ready for occupancy very soon after January 1. The additional space provides increased room and facilities for the tire and executive office departments. The Diamond company has also this season added extensively to its factory equipment in the tire and other departments.

The "Boss of Philadelphia," Israel W. Durham, received a belated Christmas present in the shape of a \$4,000 Panhard, which came over on the *Rhynland*, which, owing to the storms that beset the craft on her passage, did not reach the Quaker City in time to be tucked away in the "Boss" stocking on Christmas eve.

During the ten months ending October, 1903, automobiles to the amount of \$561 were exported to Porto Rico from this country; for the same period in 1904, \$25,171. For the same periods the exports to Hawaii showed an increase from \$3,428 in 1903 to \$15,343 in 1904.

The annual automobile number of *Collier's Weekly* will appear on January 21, 1905. Announcement of the fact is made in

AMERICAN AND FOREIGN AUTOMOBILE AND AUTO-BOAT FIXTURES.

Dec. 26-Jan. 2.—Reliability Trials. Motor Union of Western India. 833 Miles Reliability Trial, Delhi to Bombay.
 Jan. 11-24.—First Annual Importers' Automobile Salon. Herald Square Hall, New York.
 Jan. 14-21.—Fifth Annual Automobile Show, Madison Square Garden, New York. N. A. A. M., Madison Square Garden Co. and A. C. A.
 Jan. 14-24.—Fourth Annual Automobile Show at Brussels, Belgium.
 Jan. 21.—A. C. A. Banquet, Waldorf-Astoria, New York City.
 Jan. 21-28.—Birmingham Motor Show.
 Jan. 21-Feb. 6.—Turin Automobile Exhibition.
 Jan. 23-28.—Ormond-Daytona Automobile Tournament. Florida East Coast Automobile Association.
 Jan. 23-28.—Philadelphia Annual Automobile Show. A. C. of Philadelphia and Auto Dealers' Assn. of Phila.
 Jan. 27-Feb. 4.—Fourth Annual Automobile Show Crystal Palace, London.
 Feb. 1-4.—First Annual Power Boat Carnival and Races. Lake Worth, Fla., Palm Beach P. B. A.
 Feb. 4-11.—Fifth Annual Automobile Exhibition, Chicago. Coliseum Building. N. A. A. M. and C. A. C.
 Feb. 4-19.—Automobile Exhibition at Berlin, Germany.
 Feb. 5-19.—Automobile Week, Nice, France.

Feb. 9.—First Annual Cuban Automobile Carnival, Havana.
 Feb. 10-18.—Automobile Exhibition at Olympia, London, England. Society of Motor Manufacturers and Traders.
 Feb. 13-18.—Fourth Annual Exhibition at Detroit. Tri-State Automobile and Sporting Goods Association.
 Feb. 21-March 9.—National Motor Boat Show, Madison Square Garden, New York. Nat. Assn. Engine and Boat Mfrs.
 Feb. 20-25.—Cleveland Automobile Show. Cleveland Automobile Club.
 Feb. 24-Mch. 4.—Edinburgh Automobile Show.
 Feb. 24.—Manchester Automobile Show.
 Feb. 27-March 4.—Automobile Exhibition, Toronto, Canada.
 March 3-11.—Motor Show, Liverpool, England.
 March 6-11.—Third Annual Buffalo Automobile Show, Convention Hall Buffalo. Buffalo Automobile Club.
 March 13-18.—Third Annual Automobile Show, Boston. Boston Automobile Dealers' Assn.
 March 13-18.—Importers' Automobile Salon, Symphony Hall, Boston.
 March 27-April 5.—Fifth Annual Washington Automobile Show. Washington Auto. Dealers' Assn.
 April 1.—Light Van Trials. A. C. of Great Britain.
 April 2-16.—Monaco Motor Boat Fortnight.
 May 11-25.—Stockholm Automobile Show.
 June 26.—Mont Ceniz Hill Climb.

a handsomely prepared pamphlet, illustrated with a number of quaint pictures of various styles of vehicular transportation, from the solid-wheeled bullock cart and the Assyrian war chariot to the modern automobile with limousine.

F. T. Bedford, a vice-president of the Standard Oil Co., is a recent purchaser of a 24-30-horsepower F.I.A.T. from Hollander & Tangemann, New York. A 90-horsepower racer has also been ordered through this firm for a prominent American amateur, whose name is withheld for the present.

At the recent convention of the Pennsylvania State Grange, at Erie, a resolution was presented, and favorably acted upon, asking the Legislature to enact a law regulating the speed of automobiles and giving horses the right of way on all the roads of the State.

The Auto-Cycle Club of Great Britain is planning an international event for lightweight machines on the Isle of Man course for next season, in which it is expected that representatives of most of the motoring nations will be seen at the start. Details will be given in due time.

W. H. Webster, formerly with the automobile department of John Wanamaker, is now connected with the New York branch of the Maxwell-Briscoe Motor Car Co., recently established at 317-319 West 59th street. Col. K. C. Pardee is in charge of the New York store.

P. A. Williams, Jr., of Boston, has taken the agency for the Marion car in addition to the Ford, which he already had. He will be New England representative for both, and after January 1 will conduct the business under his own name instead of the Ford Automobile Co.

C. A. Coey & Co., Chicago, agents for the Thomas cars, now located at 5311 Cottage Grove avenue, announce that after January 10 they will be located at 1323 and 1325 Michigan avenue. They have had a very successful season and anticipate an even greater business the coming year.

The Houston Motor Car Co. has established a garage and fully equipped repair station at 1013-15 Main street, Houston, Texas. The company has secured the state agency for the Union automobile, and will in addition handle other makes of cars, including a line of electrics.

William Taylor, who recently barely missed running down Mayor Jeffery, of Columbus, O., was fined \$50 and costs in police court for fast driving. The fine, however, was remitted.

The city council of Los Angeles, Cal., at a recent meeting, adopted resolutions empowering the Board of Police and Fire Commissioners to purchase an electric automobile patrol and ambulance at a cost not exceeding \$2,400.

A new garage has been erected to accommodate the business of J. A. Place, 145 Castle street, Geneva, N. Y. This will have a capacity of from fifteen to twenty machines, and will have a machine shop run by a gas engine.

The mid-winter convention of the National Good Roads Association will be held at Jacksonville, Fla., January 19 to 21, two days prior to the Ormond-Daytona automobile tournament.

W. Philip Johnson, 1231 Webster street, New Orleans, La., has secured the agency for that territory for the Thomas cars, made by the E. R. Thomas Motor Co., at Buffalo, N. Y.

Harrington's Automobile Station No. 1, of Worcester, Mass., will retain the agency for the Stevens-Duryea and has taken on the Columbia line. It will probably secure one or two more lines in the near future.

The rumor that a stock company had been formed and had purchased the automobile business of J. J. Mandery, of Rochester, N. Y., is denounced as entirely groundless.

The Central Automobile Exchange, of Worcester, Mass., will retain the Pierce agency and has taken on the Winton, and will doubtless retain the White agency.

The Pan-American Polish Co., formerly of East Cleveland, O., has removed to St. Louis, and is now located at the corner of Olive and Walton streets.

Rev. E. H. Pence, for many years pastor of the First Presbyterian Church at Janesville, Wis., has been presented by his Detroit parishioners with an automobile.

The Thomas Flyer will be represented in Vermont for 1905 by Manley Bros., of Brattleboro, and in Manchester, N. H., by F. H. Emerson.

The Detroit Electric Co., 56 Shelby street, Detroit, has changed its name to the Robert Instrument Co., under which name the business will be conducted as formerly.

The Motor Car Co., of Newark, N. J., has secured the agency for the Winton and Packard cars for 1905, and in addition will also handle the Autocar and Cadillac machines.

Albert Griebel, formerly of Griebel Bros., has opened an automobile repair station at Woodstock, Ill.

SCHOOL OF OPERATION.

Special Correspondence.

PHILADELPHIA, Dec. 26.—With the opening of the new year there is to be inaugurated here a school of instruction in the operation and care of automobiles. The term will consume thirteen weeks, with three lectures and three lessons each week. Day and evening sessions with ladies' classes on Tuesdays and Fridays will be held on a fine indoor driving course, the able corps of instructors being professional chauffeurs, including some foreign experts.

F. W. Reese, secretary of the new school, who has established his headquarters at 244 North Broad street, says that the basis for the foundation of the new scheme is the absolute scarcity of really competent automobile operators and the conviction that within a year or two the demand for experienced men capable of handling an automobile with judgment will increase one hundredfold. Not only that, the number of owners who "know" their cars is comparatively small, and from among this class the founders of the new school expect to secure many pupils. Gasoline, steam and electric vehicles will be thoroughly demonstrated and practice cars will be on hand at all times for the pupils. A special feature will be made of the handling of marine engines, a branch of motoring which is destined to expand greatly during the next year or two. Sessions will be opened early in January.

RECENT INCORPORATIONS.

Hoyt Motor Co., Brooklyn, N. Y.; capital, \$100,000. Directors: G. P. B. Hoyt, Jamaica; F. E. Kruger, Douglaston, and G. A. Phail, Flushing, all of Long Island.

East Coast Automobile Co., Jacksonville, Fla.; capital, \$10,000; to conduct a wholesale and retail automobile, motor boat and marine engine business. Incorporators: P. L. Sutherland, Guy R. Champlain, E. A. Groover, A. D. Covington and A. S. Hubbard.

Ohio Good Roads Association, Cleveland; to promote improvement of public highways. Incorporators: William Faareburgh, C. B. Wilcox, Malcolm Kelly, S. H. Seimbach and Fred. S. Chamberlain.

Wilson Auto-Transit Co., Wilson, N. C.; capital, \$100,000; to establish automobile lines for the transportation of freight and passengers, to buy, sell and manufacture wagons, buggies and motor vehicles. Incorporators: W. B. Young, Hattie B. Young, J. C. Hales, B. W. Kincaid, C. F. Botts, R. E. Massey and S. H. Finch.

INFORMATION FOR BUYERS

FEDERAL HOUSE ORGAN.—Following the practice of many large manufacturing establishments, the Federal Mfg. Co., of Elyria, O., has begun the publication of a periodical devoted to the interests of its business, the first number having been issued in December. This little magazine, called *The Automobile Builder*, is unusually free from one-sidedness—in fact, it requires considerable effort to discover that it is not a well gotten up monthly devoted to the technical side of the automobile industry in general. The articles treat of the mistake of applying standard engineering formulae to automobile construction: "The Evolution of Minor Transportation," "Designing Pressed Steel Frames," "Care of Electric Vehicles," discussions on wheel material, English trade conditions, steel castings for automobiles, shop equipment, and a number of other subjects, all of great interest to the practical automobile man, and written and printed in an excellent style. The *Automobile Builder* has made a good start. The paper is published at 610 American Trust Building, Cleveland, O. It is edited by Walter Wardrop.

PACKARD IGNITION CABLES.—The method used by the Packard Electric Co., of Warren, O., in the manufacture of insulated cables for wiring the ignition systems of automobiles is described in a little catalogue issued by that concern, and those who read it will, if unfamiliar with the habits of the high tension ignition current, be surprised at the amount of care and labor devoted to preventing electrical leaks. The compound used for coating the many successive coverings used in the Packard cables is of special composition, and is baked on in a steam-heated oven. It is flexible and grease-proof. The manufacturers state that the Packard car which made a trans-continental run in the summer of 1903 was fitted with this cable, and after cleaning off a piece that had been constantly covered with oil and grease, it was found to be quite uninjured, the oil having had no effect even on the surface coating of enamel. It might be mentioned that the two Packard concerns are separate companies, having nothing in common except the name Packard.

GRAPHITE LUBRICATION.—The Joseph Dixon Crucible Co.'s house organ, *Graphite*, contains in its initial number for 1905 considerable information on the subject of lubrication generally, and on graphite lubrication in particular. The advantages of graphite lubrication are dealt with and so are the difficulties of using the material, which are not underestimated or smoothed over in the least. A number of hints are given that should be useful to anyone in charge of machinery, whether they use graphite or not.

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SPECIAL NOTICES

Advertisements inserted under this heading at 30 cents per line; about 7 words make a line. Remittances should accompany copy. Replies forwarded if postage is furnished.

AT reasonable price, Waverley Electric; 30 cells; new last spring; A1 condition. Waverley, 12 W. Read st., Baltimore, Md. 31

ASOLUTION to prevent acetylene generators freezing; will nearly double the time a lamp will run with one charging; also preventing the saturated carbide freezing. H. J. Willard, Congress Sq. Auto Station, Portland, Me. Jan 7

AMORE uniform mixture can be obtained by the use of our automatic air governor, when applied to the Oldsmobile mixer; this means more power and speed; easily attached; not necessary to remove mixer; sent upon receipt of price, \$2.50; circular upon application. More-Power Co., Box 175, Lowell, Mass. Jan 7

CHAUFFEUR, strictly temperate, reliable, experienced on high-powered cars, thorough mechanic, desires position; licensed in New York, Massachusetts; best references, factory and present employer. Address Reliable Chauffeur, care Automobile. 31

CLEMENT-BAYARD for sale, 15-h.p. car, in fine condition; light and fast; Springfield top, lamps and tools; Michelin and Samson tires. E. T., room 146, 45 Broadway, N. Y. city. 31

FOR SALE—14-h.p. Renault, 1903; very desirable car. H. A. P., 1684 Broadway, N. Y. 31

FOR SALE—11-2-h.p. Stationary Gasoline Engines; price \$55. Blaine Snepp, Auburn, Ind. 31

FOR SALE—12-h.p. Packard Engine and Transmission; engine not used over four months. J. A. Place, Geneva, N. Y. 31

FOR SALE—Type VIII Autocar Tonneau; good condition; price \$1,000. Address Garretson Cycle Co., Somerville, N. J. Jan 7

FOR SALE—Thomas Flyer; excellent condition; Fisk tires; practically new; color red; side lamps and horn; price \$1,500; no trade considered. Address R. Lipps, S. E. Cor. Balto. and Pulaski sts., Baltimore, Md. 7

FOR SALE—Wire Wheels for old-style Oldsmobiles; \$5 per set net; Mud Guards and iron complete for same machine, \$8 per set net; equip your Olds car with new wheels and mud guards. Olds Motor Works, Detroit, Mich. 31

FOR SALE—7 1-2-h.p. Panhard Touring Car, complete, with canopy top and all accessories; absolutely fine condition; price \$1,500; 8-h.p. Jones-Corbin Runabout, good as new, price \$600. Apply Oscar Anderson, 438 Oak st., Chicago, Ill. 31

FOR RENT—A large two-story building (40x76), in choicest business location of South Orange, N. J.; a first-class and progressive town; easily adapted for use as Automobile Garage or first-class livery stable. J. Charles O'Brien, 141 Broadway, New York. 31

FOR SALE—One 1904 Franklin Runabout, \$1,000, and one 1904 Franklin Light Tonneau, \$1,200; the above cars have been used but little, and are absolutely as good as new. Address The E. H. Towle Co., Auto Station, Harrison av., Waterbury, Conn. feb 18

FOR SALE—1904 WHITE STEAMER, brand new, never used; 1903 WHITE STEAMER, tires and paint good condition, machinery guaranteed mechanically perfect; 1904 QUEEN, seats five, clincher tires, everything guaranteed in A1 condition; want to buy White Steamers. C. C. Stolz, Marion, Ohio. Jan 7

FOR SALE—A solution that will not freeze at 30 below nor attack rubber hose connections or metal; leaves absolutely no deposit, and is a better conductor of heat than water; suitable for cellular coolers. Thoroughly tested last winter. H. J. Willard, Congress Sq. Auto Station, 18 Forest Ave., Portland, Me. Jan. 7.

FOR SALE—16-h.p. four-ton Panhard Le-vassor Delivery Truck, in perfect running condition; a splendid machine at a bargain. Fairmount Engineering Works, 2652 Callowhill st., Philadelphia, Pa. 31

FOR SALE—1904 Pierce Arrow Cars; 1 two-cylinder, with top, baskets and new tires, as good as new; 1 four-cylinder, with baskets and new rear tires, in guaranteed condition; these cars are excellent propositions for used cars, and will stand any test. H. Paulman & Company, No. 285 N. State st., Chicago. 31

FOR SALE—3 new 1905 Mitchel two-cylinder Air-Cooled Cars, \$500; 1 1904 Pope-Tribune, run only two weeks, \$400; 1 1904 Pope-Toledo, four-cylinder, with top, \$2,700; 1 1904 Peerless, four-cylinder, complete, \$2,700; 2 1904 Olds runabouts, nearly new, \$500; 2 1904 Pope-Toledos, two-cylinder, fine condition, \$1,550; 1 1904 Franklin Tonneau, nearly new, \$1,150; 1 1902 Winton, with 1904 improvements, \$700; we have a large stock of other machines on hand; write us for prices. Amos Pierce Automobile Co., 109-111 So. State st., Syracuse, N. Y. Jan 7

MANHATTAN Storage Co., the largest dealers of second-hand, shop-worn and demonstrating automobiles in America; automobiles from \$75 to \$3,000; worth from \$750 to \$8,500. Write, call or telephone. 334-336-338-340 West 44th st., New York city. Phone No. 4,290-38th. 31

OUR BARGAIN List.—1 1904 Michigan, with top, \$350; 1 1904 Olds 6-h.p., \$375; 1 Kensington Electric, less battery, \$125. Jacob Roth Auto Co., Erie, Pa. Jan 7

SALESMAN.—A machine salesman, age 30, with seven years' experience, three years with automobiles, desires position. Address E. N. B., care The Automobile. 3-31

WANTED—Oldsmobile Runabout, 1904 pattern, in good condition. L. R. Lee, Hotel Richmond, Washington, D. C. 31

WANTED—1904 large Foreign Car; will pay \$25 for address of owner (provided a purchase results). B. M. Baker, P. O. box 2898, Boston. 31

WANTED—A Mark XXXVIII Columbia Electric Runabout, without top; must be a bargain price; or will exchange a fine gasoline car in trade. Address H. R. T. W., care Automobile. Jan 7

WANTED.—The address of any Autocar owner that would like to have the power of the motor increased 10 to 20 per cent. Write H. J. Willard, Congress Square Automobile Station, Portland, Me. Jan. 7

WANTED—Young man as salesman, competent to manage auto business; will be given half profits of business for services; must be a hustler and unquestionable character; business consists of Premier, Reo and Ford. Address Eastern, care Automobile. 31

WANTED—A high-class salesman of experience, ability and force to demonstrate and sell the Pope-Toledo and other gasoline cars in connection with one of the largest garages in the country; a fine opportunity for a well-educated, able and energetic man, and no other need apply. Reply, with references and full particulars, to Experience, care Automobile. Jan 7

WANTED—A first-class, reliable and experienced man to act as foreman in machine shop building automobile motors and complete cars; new machinery; good chance for a competent man who wants to better his position; give reference and experience, salary wanted, &c.; can go to work immediately. Address Box 135, York, Pa. Jan 7

WANTED—A demonstrator and salesman for the White Steamer in a large eastern city; must be an educated man, of good address and pleasing personality, and thoroughly familiar with the construction and demonstration of the White car; to the right man the position would be remunerative and permanent; complete and responsible references required. Reply, with full particulars, to Permanent, care Automobile. Jan 7

\$300—Winton Surrey, in first-class condition in every respect. Central Motor Car Co., Germantown, Phila. 31

1904 Tonneau Auto Car, canopy top and headlights; run less than 500 miles; A1 condition; \$1,100. Arthur McNall, 76 South av., Rochester, N. Y. 31

AUTO APPAREL

FOR MEN AND WOMEN

First Prize St. Louis Exposition

No. 1000. MASK CAP FOR MEN

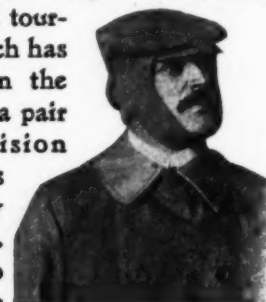


Position 1

So favorably were we impressed with this model which our designers conceived, that we petitioned for a patent which has been granted. The

illustrations clearly convey to the eye the four functions which this cap faithfully answers. Figure one presents

a dignified tourist cap which has attached in the back fold a pair of wide vision goggles cleverly concealed. Figure two



Position 2

shows the hood in

service. The visor is flexible and easily turned up into the crown of the cap when the mask and goggles are in



Position 3

service as Figure three depicts. From the

wind, the snow, the dust and rain [does the cap warrant immunity.

- a. Of Cheviot Cloth, in mixtures; Burberry Cloth, in grey or tan; Cravenette Cloth in mixtures; Covert Cloth in tan or brown; Linen in tan or any other fabric of which our garments are made, \$4.75
- b. Of Danish Leather, in tan or black, 6.00

Please send for our 372-page catalogue.

Saks & Company

Broadway, 33d to 34th St., New York

